



# $J^P = 0^+$ Amplitudes

## Inverse of $\mathbf{K}$ as a polynomial

Amplitudes with names of the form `k_inv_poly_ABCDEF` are of the form

$$\mathbf{K}^{-1}(s) = \begin{pmatrix} A(s) & B(s) & C(s) \\ B(s) & D(s) & E(s) \\ C(s) & E(s) & F(s) \end{pmatrix} \quad (1)$$

with row/column ordering  $\pi\pi, K\bar{K}, \eta\eta$ . The encoding of  $A\dots F$  indicates the order of the polynomial used in the relevant element, e.g.

$$\begin{aligned} \mathbf{A}=\mathbf{x} &\implies A(s) = 0 \\ \mathbf{A}=\mathbf{c} &\implies A(s) = \text{const} \\ \mathbf{A}=\mathbf{l} &\implies A(s) = a + b s \\ \mathbf{A}=\mathbf{q} &\implies A(s) = a + b s + c s^2 \\ \mathbf{A}=\mathbf{s} &\implies A(s) = b s \end{aligned}$$

If the amplitude name features `_noCM`, the naive phase-space is used,  $I_{ij}(s) = -\rho_i(s)\delta_{ij}$ , otherwise the Chew-Mandelstam phase-space subtracted at threshold is used.

The parameter names should be self-explanatory: e.g.

`JP0+_c_kaon:kaon/1^S_0|pi:pi/1^S_0_order0`, `JP0+_c_kaon:kaon/1^S_0|pi:pi/1^S_0_order1`

appear in a  $B(s) = a + b s$  element as  $a, b$  respectively.

## **K as a polynomial**

Amplitudes with names of the form `k_ABCDEF` are of the form

$$\mathbf{K}(s) = \begin{pmatrix} A(s) & B(s) & C(s) \\ B(s) & D(s) & E(s) \\ C(s) & E(s) & F(s) \end{pmatrix} \quad (2)$$

with row/column ordering  $\pi\pi, K\bar{K}, \eta\eta$ . The encoding of  $A\dots F$  indicates the order of the polynomial used in the relevant element, e.g.

$$\begin{aligned} \mathbf{A=x} &\implies A(s) = 0 \\ \mathbf{A=c} &\implies A(s) = \text{const} \\ \mathbf{A=l} &\implies A(s) = a + b s \\ \mathbf{A=q} &\implies A(s) = a + b s + c s^2 \\ \mathbf{A=s} &\implies A(s) = b s \end{aligned}$$

If the amplitude name features `_noCM`, the naive phase-space is used,  $I_{ij}(s) = -\rho_i(s)\delta_{ij}$ , otherwise the Chew-Mandelstam phase-space subtracted at threshold is used.

The parameter names should be self-explanatory: e.g.

`JP0+_gamma_pi:pi/1^S_0|pi:pi/1^S_0_order0`, `JP0+_gamma_pi:pi/1^S_0|pi:pi/1^S_0_order1`

appear in an  $A(s) = a + b s$  element as  $a, b$  respectively.

## K as a pole plus a polynomial

Amplitudes with names of the form `k_sigma_pole_ABCDEF` are of the form

$$\mathbf{K}(s) = \frac{1}{m^2 - s} \begin{pmatrix} g_{\pi\pi}^2 & g_{\pi\pi}g_{K\bar{K}} & g_{\pi\pi}g_{\eta\eta} \\ g_{\pi\pi}g_{K\bar{K}} & g_{K\bar{K}}^2 & g_{K\bar{K}}g_{\eta\eta} \\ g_{\pi\pi}g_{\eta\eta} & g_{K\bar{K}}g_{\eta\eta} & g_{\eta\eta}^2 \end{pmatrix} + \begin{pmatrix} A(s) & B(s) & C(s) \\ B(s) & D(s) & E(s) \\ C(s) & E(s) & F(s) \end{pmatrix} \quad (3)$$

with row/column ordering  $\pi\pi, K\bar{K}, \eta\eta$ . The encoding of  $A \dots F$  indicates the order of the polynomial used in the relevant element, e.g.

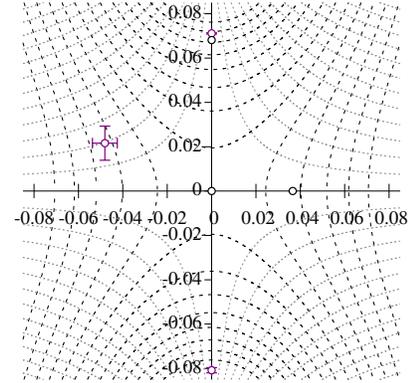
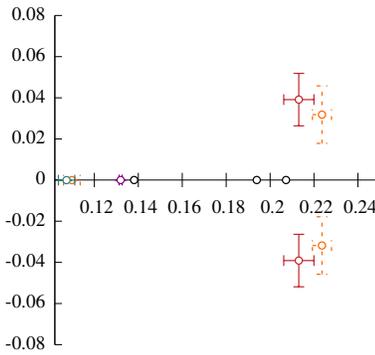
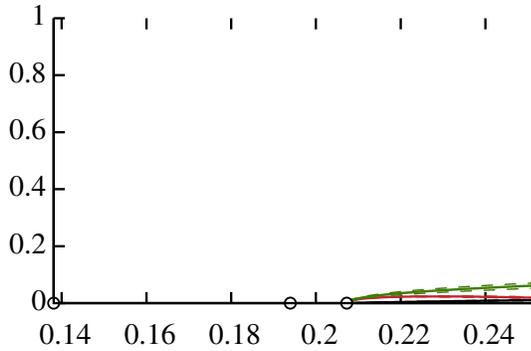
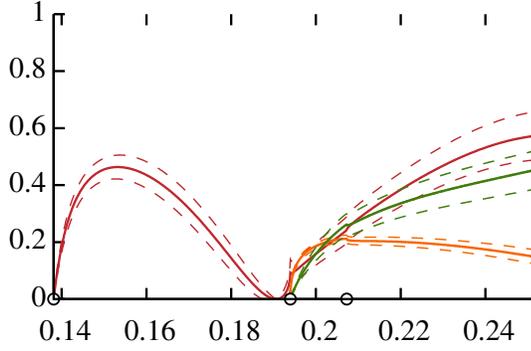
$$\begin{aligned} \mathbf{A=x} &\implies A(s) = 0 \\ \mathbf{A=c} &\implies A(s) = \text{const} \\ \mathbf{A=l} &\implies A(s) = a + b s \\ \mathbf{A=q} &\implies A(s) = a + b s + c s^2 \\ \mathbf{A=s} &\implies A(s) = b s \end{aligned}$$

If the amplitude name features `_noCM`, the naive phase-space is used,  $I_{ij}(s) = -\rho_i(s)\delta_{ij}$ , otherwise the Chew-Mandelstam phase-space subtracted **at the  $K$ -matrix pole position**,  $s = m^2$ .

The parameter names should be self-explanatory.

$$a_t E_{\text{cm}} < 0.24$$

# k\_inv\_poly\_llcccc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 44.10 / (57 - 8) = 0.90$

JP0+_c_eta:eta/1^S_0 eta:eta/1^S_0_order0		21.665 +/- 0.38655		1.00	0.71	0.06	0.06	-0.05	0.09	-0.03	-0.00
JP0+_c_eta:eta/1^S_0 kaon:kaon/1^S_0_order0		8.4603 +/- 0.10569			1.00	0.13	0.62	-0.17	0.04	-0.08	0.04
JP0+_c_eta:eta/1^S_0 pi:pi/1^S_0_order0		1.0390 +/- 0.10605				1.00	0.01	0.46	0.30	-0.25	0.23
JP0+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0		3.0897 +/- 0.048207					1.00	0.01	0.11	-0.05	0.02
JP0+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order0		1.0965 +/- 0.044007						1.00	-0.32	0.45	-0.26
JP0+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order1		-0.15923 +/- 0.049964							1.00	-0.35	0.21
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order0		1.4470 +/- 0.10499								1.00	-0.86
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order1		-1.3163 +/- 0.10139									1.00

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13197 \pm 0.00071527) + (i/2)*(+5.0066e-13 \pm 1.4595e-10)$  [ 0.05]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0000 +/- 0.0000		k_re= 0.0000 +/- 0.0000		k_re= 0.0000 +/- 0.0000	
k_im= 0.0799 +/- 0.0003		k_im= 0.0711 +/- 0.0003		k_im= 0.0204 +/- 0.0012	
corr= [-0.05]		corr= [-0.05]		corr= [-0.05]	
g = 0.0551 +/- 0.0038		g = 0.1561 +/- 0.0092		g = 0.0942 +/- 0.0029	
arg(g)/pi= 0.0000 +/- 0.0000		arg(g)/pi= 1.0000 +/- 0.0000		arg(g)/pi= -0.0000 +/- 0.0000	
g_re= 0.0551 +/- 0.0038		g_re= -0.1561 +/- 0.0092		g_re= 0.0942 +/- 0.0029	
g_im= 0.0000 +/- 0.0000		g_im= 0.0000 +/- 0.0000		g_im= -0.0000 +/- 0.0000	
corr= [-1.00]		corr= [ 0.94]		corr= [ 0.01]	

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

$\text{sqrt}(s)_{\text{pole}} = (0.21308 \pm 0.0068791) + (i/2)*(-0.039116 \pm 0.012777)$  [ 0.59]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
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=====
k_re= -0.0365 +/- 0.0054 | k_re= -0.0481 +/- 0.0056 | k_re= 0.0815 +/- 0.0043 |
k_im= 0.0286 +/- 0.0094 | k_im= 0.0216 +/- 0.0077 | k_im= -0.0128 +/- 0.0043 |
corr= [ 0.36] | corr= [ 0.53] | corr= [ 0.59] |
=====
|g|= 0.0770 +/- 0.0108 | |g|= 0.2059 +/- 0.0307 | |g|= 0.1666 +/- 0.0223 |
arg(g)/pi= 0.3277 +/- 0.0420 | arg(g)/pi= -0.6381 +/- 0.0452 | arg(g)/pi= 0.7483 +/- 0.0764 |
=====
g_re= 0.0397 +/- 0.0126 | g_re= -0.0865 +/- 0.0352 | g_re= -0.1172 +/- 0.0263 |
g_im= 0.0660 +/- 0.0079 | g_im= -0.1868 +/- 0.0237 | g_im= 0.1184 +/- 0.0375 |
corr= [ 0.34] | corr= [ 0.41] | corr= [ 0.56] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0+| kaon:kaon/1^S\_0-| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.10735 +/- 0.0037341)  
+ (i/2)\*(-1.7471e-13 +/- 5.2208e-11) [ 0.02]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= 0.0887 +/- 0.0011 | k_im= -0.0808 +/- 0.0012 | k_im= -0.0435 +/- 0.0023 |
corr= [-0.02] | corr= [-0.02] | corr= [-0.02] |
=====
|g|= 0.0126 +/- 0.0008 | |g|= 0.0223 +/- 0.0013 | |g|= 0.0880 +/- 0.0034 |
arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 |
=====
g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 |
g_im= 0.0126 +/- 0.0008 | g_im= -0.0223 +/- 0.0013 | g_im= -0.0880 +/- 0.0034 |
corr= [-1.00] | corr= [ 0.42] | corr= [ 0.58] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0+| kaon:kaon/1^S\_0-| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.25907 +/- 0.00703)  
+ (i/2)\*(-0.14346 +/- 0.013452) [-0.39]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0871 +/- 0.0051 | k_re= 0.0927 +/- 0.0048 | k_re= 0.1116 +/- 0.0041 |
k_im= 0.0533 +/- 0.0039 | k_im= -0.0501 +/- 0.0039 | k_im= -0.0416 +/- 0.0037 |
corr= [-0.32] | corr= [-0.34] | corr= [-0.38] |
=====
|g|= 0.0357 +/- 0.0017 | |g|= 0.0854 +/- 0.0075 | |g|= 0.1794 +/- 0.0077 |
arg(g)/pi= -0.3228 +/- 0.0482 | arg(g)/pi= 0.6108 +/- 0.0482 | arg(g)/pi= -0.9753 +/- 0.0029 |
=====
g_re= 0.0189 +/- 0.0038 | g_re= -0.0291 +/- 0.0097 | g_re= -0.1788 +/- 0.0076 |
g_im= -0.0303 +/- 0.0042 | g_im= 0.0803 +/- 0.0114 | g_im= -0.0139 +/- 0.0020 |
corr= [ 0.97] | corr= [ 0.98] | corr= [ 0.70] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0+|

sqrt(s)\_pole = (0.14479 +/- 0.0058672)  
+ (i/2)\*(-0.13244 +/- 0.0075059) [-0.91]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0279 +/- 0.0029 | k_re= -0.0305 +/- 0.0032 | k_re= -0.0459 +/- 0.0039 |
k_im= -0.0859 +/- 0.0010 | k_im= 0.0787 +/- 0.0009 | k_im= 0.0522 +/- 0.0009 |
corr= [ 0.80] | corr= [ 0.73] | corr= [-0.55] |
=====
|g|= 0.0982 +/- 0.0055 | |g|= 0.2486 +/- 0.0133 | |g|= 0.0874 +/- 0.0037 |
arg(g)/pi= 0.2596 +/- 0.0055 | arg(g)/pi= -0.7693 +/- 0.0061 | arg(g)/pi= 0.0652 +/- 0.0139 |
=====
g_re= 0.0673 +/- 0.0031 | g_re= -0.1861 +/- 0.0081 | g_re= 0.0856 +/- 0.0031 |
g_im= 0.0715 +/- 0.0048 | g_im= -0.1648 +/- 0.0116 | g_im= 0.0178 +/- 0.0044 |
corr= [ 0.88] | corr= [ 0.87] | corr= [ 0.78] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.22362 +/- 0.0043712)  
+ (i/2)\*(-0.031787 +/- 0.013969) [ 0.44]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0456 +/- 0.0042 | k_re= -0.0572 +/- 0.0037 | k_re= 0.0882 +/- 0.0027 |
k_im= -0.0195 +/- 0.0083 | k_im= 0.0155 +/- 0.0069 | k_im= -0.0101 +/- 0.0045 |
corr= [ 0.05] | corr= [ 0.24] | corr= [ 0.40] |
=====
|g|= 0.0744 +/- 0.0053 | |g|= 0.1932 +/- 0.0139 | |g|= 0.1468 +/- 0.0100 |
arg(g)/pi= 0.3881 +/- 0.0165 | arg(g)/pi= -0.5898 +/- 0.0172 | arg(g)/pi= 0.8435 +/- 0.0358 |
=====
g_re= 0.0256 +/- 0.0045 | g_re= -0.0538 +/- 0.0116 | g_re= -0.1294 +/- 0.0089 |
g_im= 0.0699 +/- 0.0048 | g_im= -0.1856 +/- 0.0130 | g_im= 0.0693 +/- 0.0172 |
corr= [ 0.39] | corr= [ 0.34] | corr= [ 0.20] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.083902 +/- 0.0039024)

+ (i/2)\*(+2.2922e-15 +/- 5.2426e-13) [-0.08]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= -0.0948 +/- 0.0009	k_im= 0.0874 +/- 0.0009	k_im= -0.0549 +/- 0.0015
corr= [ 0.08]	corr= [ 0.08]	corr= [ 0.08]
g = 0.0383 +/- 0.0025	g = 0.0747 +/- 0.0055	g = 0.0458 +/- 0.0043
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000
g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000
g_im= 0.0383 +/- 0.0025	g_im= -0.0747 +/- 0.0055	g_im= -0.0458 +/- 0.0043
corr= [-1.00]	corr= [ 0.87]	corr= [-0.20]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.25615 +/- 0.007047)  
+ (i/2)\*(-0.14136 +/- 0.012267) [-0.44]

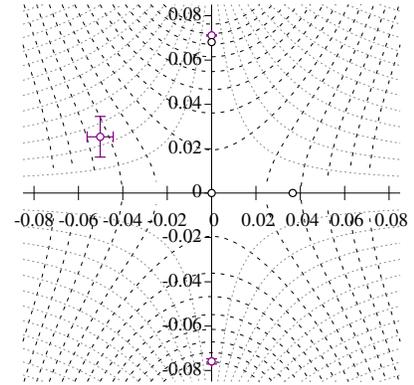
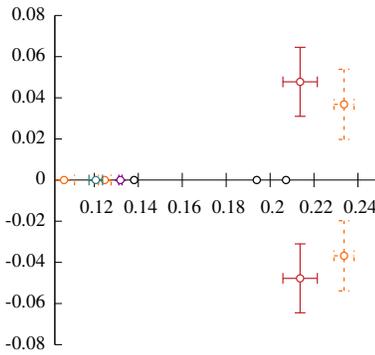
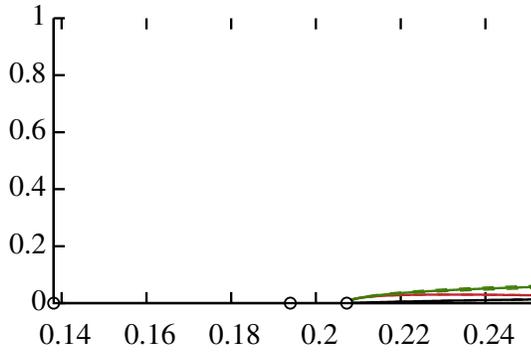
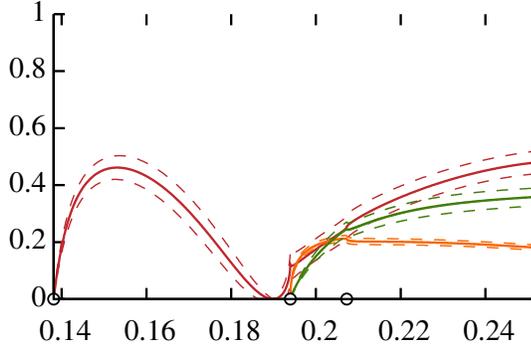
eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0851 +/- 0.0051	k_re= 0.0908 +/- 0.0049	k_re= 0.1099 +/- 0.0041
k_im= -0.0532 +/- 0.0035	k_im= -0.0499 +/- 0.0035	k_im= -0.0412 +/- 0.0033
corr= [-0.31]	corr= [-0.34]	corr= [-0.41]
g = 0.0307 +/- 0.0016	g = 0.0697 +/- 0.0072	g = 0.1817 +/- 0.0077
arg(g)/pi= -0.2827 +/- 0.0460	arg(g)/pi= 0.6152 +/- 0.0459	arg(g)/pi= -0.9766 +/- 0.0025
g_re= 0.0193 +/- 0.0025	g_re= -0.0247 +/- 0.0070	g_re= -0.1812 +/- 0.0076
g_im= -0.0238 +/- 0.0040	g_im= 0.0651 +/- 0.0101	g_im= -0.0133 +/- 0.0019
corr= [ 0.96]	corr= [ 0.95]	corr= [ 0.81]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.10975 +/- 0.0037625)  
+ (i/2)\*(-2.4682e-12 +/- 7.384e-10) [ 0.02]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000
k_im= -0.0879 +/- 0.0012	k_im= -0.0800 +/- 0.0013	k_im= -0.0419 +/- 0.0025
corr= [-0.02]	corr= [-0.02]	corr= [-0.02]
g = 0.0127 +/- 0.0007	g = 0.0175 +/- 0.0011	g = 0.0908 +/- 0.0032
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000
g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000
g_im= 0.0127 +/- 0.0007	g_im= -0.0175 +/- 0.0011	g_im= -0.0908 +/- 0.0032
corr= [-1.00]	corr= [ 0.06]	corr= [ 0.47]

# k\_inv\_poly\_lcccc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 45.81 / (57 - 7) = 0.92$

JPO+_c_eta:eta/1^S_0 eta:eta/1^S_0_order0		20.323 +/- 0.53781		1.00	0.79	0.09	0.11	-0.10	-0.01	-0.03
JPO+_c_eta:eta/1^S_0 kaon:kaon/1^S_0_order0		8.5604 +/- 0.1469			1.00	0.11	0.62	-0.12	-0.10	0.03
JPO+_c_eta:eta/1^S_0 pi:pi/1^S_0_order0		2.1489 +/- 0.12233				1.00	-0.04	0.74	-0.04	0.21
JPO+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0		3.3675 +/- 0.06568					1.00	0.08	-0.04	-0.00
JPO+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order0		1.4169 +/- 0.051195						1.00	0.43	-0.14
JPO+_c_pi:pi/1^S_0 pi:pi/1^S_0_order0		1.2101 +/- 0.099134							1.00	-0.85
JPO+_c_pi:pi/1^S_0 pi:pi/1^S_0_order1		-0.99764 +/- 0.10409								1.00

## pole singularities

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13187 \pm 0.00075136) + (i/2) * (1.224e-12 \pm 3.6166e-10) [0.02]$

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0000 +/- 0.0000		k_re= 0.0000 +/- 0.0000		k_re= 0.0000 +/- 0.0000	
k_im= 0.0800 +/- 0.0003		k_im= 0.0711 +/- 0.0003		k_im= 0.0205 +/- 0.0012	
corr= [-0.02]		corr= [-0.02]		corr= [-0.02]	
-----					
g = 0.0469 +/- 0.0030		g = 0.1382 +/- 0.0066		g = 0.0948 +/- 0.0027	
arg(g)/pi= 0.0000 +/- 0.0000		arg(g)/pi= 1.0000 +/- 0.0000		arg(g)/pi= -0.0000 +/- 0.0000	
-----					
g_re= 0.0469 +/- 0.0030		g_re= -0.1382 +/- 0.0066		g_re= 0.0948 +/- 0.0027	
g_im= 0.0000 +/- 0.0000		g_im= 0.0000 +/- 0.0000		g_im= -0.0000 +/- 0.0000	
corr= [-1.00]		corr= [0.88]		corr= [-0.27]	

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

$\text{sqrt}(s)_{\text{pole}} = (0.21369 \pm 0.0078353) + (i/2) * (-0.047765 \pm 0.016768) [0.56]$

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
-----					

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k_re= -0.0396 +/- 0.0058 | k_re= -0.0502 +/- 0.0059 | k_re= 0.0821 +/- 0.0048 |
k_im= 0.0322 +/- 0.0106 | k_im= 0.0254 +/- 0.0092 | k_im= -0.0155 +/- 0.0056 |
corr= [ 0.20] | corr= [ 0.42] | corr= [ 0.55] |
-----|-----|-----|
|g|= 0.0997 +/- 0.0188 | |g|= 0.2522 +/- 0.0535 | |g|= 0.2031 +/- 0.0405 |
arg(g)/pi= 0.2679 +/- 0.0688 | arg(g)/pi= -0.6638 +/- 0.0744 | arg(g)/pi= 0.7292 +/- 0.1056 |
-----|-----|-----|
g_re= 0.0664 +/- 0.0256 | g_re= -0.1241 +/- 0.0702 | g_re= -0.1339 +/- 0.0442 |
g_im= 0.0743 +/- 0.0128 | g_im= -0.2195 +/- 0.0375 | g_im= 0.1527 +/- 0.0650 |
corr= [-0.08] | corr= [ 0.27] | corr= [ 0.56] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.12063 +/- 0.0030913)  
+ (i/2)\*(+1.0527e-16 +/- 3.6161e-14) [-0.04]

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= 0.0843 +/- 0.0011 | k_im= -0.0759 +/- 0.0012 | k_im= -0.0336 +/- 0.0028 |
corr= [ 0.04] | corr= [ 0.04] | corr= [ 0.04] |
-----|-----|-----|
|g|= 0.0196 +/- 0.0007 | |g|= 0.0240 +/- 0.0011 | |g|= 0.0951 +/- 0.0013 |
arg(g)/pi= -0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 |
g_im= 0.0196 +/- 0.0007 | g_im= -0.0240 +/- 0.0011 | g_im= -0.0951 +/- 0.0013 |
corr= [-1.00] | corr= [-0.32] | corr= [ 0.05] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = ( 0.143 +/- 0.0039936)  
+ (i/2)\*(-0.11698 +/- 0.006639) [-0.82]

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= 0.0248 +/- 0.0021 | k_re= -0.0272 +/- 0.0023 | k_re= -0.0430 +/- 0.0029 |
k_im= -0.0843 +/- 0.0008 | k_im= 0.0768 +/- 0.0008 | k_im= 0.0486 +/- 0.0011 |
corr= [ 0.54] | corr= [ 0.44] | corr= [-0.53] |
-----|-----|-----|
|g|= 0.0964 +/- 0.0041 | |g|= 0.2306 +/- 0.0076 | |g|= 0.0819 +/- 0.0031 |
arg(g)/pi= 0.2776 +/- 0.0050 | arg(g)/pi= -0.7645 +/- 0.0042 | arg(g)/pi= 0.0015 +/- 0.0159 |
-----|-----|-----|
g_re= 0.0620 +/- 0.0028 | g_re= -0.1703 +/- 0.0063 | g_re= 0.0819 +/- 0.0031 |
g_im= 0.0739 +/- 0.0034 | g_im= -0.1555 +/- 0.0052 | g_im= 0.0004 +/- 0.0041 |
corr= [ 0.76] | corr= [ 0.72] | corr= [ 0.75] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.10617 +/- 0.0047771)  
+ (i/2)\*(+2.1596e-13 +/- 6.4371e-11) [ 0.05]

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= -0.0890 +/- 0.0014 | k_im= 0.0812 +/- 0.0016 | k_im= -0.0442 +/- 0.0029 |
corr= [-0.05] | corr= [-0.05] | corr= [-0.05] |
-----|-----|-----|
|g|= 0.0532 +/- 0.0026 | |g|= 0.0934 +/- 0.0060 | |g|= 0.0623 +/- 0.0062 |
arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 |
g_im= 0.0532 +/- 0.0026 | g_im= -0.0934 +/- 0.0060 | g_im= -0.0623 +/- 0.0062 |
corr= [-1.00] | corr= [ 0.45] | corr= [-0.63] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.23366 +/- 0.0045629)  
+ (i/2)\*(-0.036805 +/- 0.017039) [-0.41]

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= 0.0564 +/- 0.0055 | k_re= -0.0665 +/- 0.0045 | k_re= 0.0945 +/- 0.0029 |
k_im= -0.0190 +/- 0.0077 | k_im= 0.0162 +/- 0.0070 | k_im= -0.0114 +/- 0.0052 |
corr= [-0.60] | corr= [-0.55] | corr= [-0.45] |
-----|-----|-----|
|g|= 0.0964 +/- 0.0094 | |g|= 0.2331 +/- 0.0251 | |g|= 0.1791 +/- 0.0198 |
arg(g)/pi= 0.3893 +/- 0.0140 | arg(g)/pi= -0.5581 +/- 0.0142 | arg(g)/pi= 0.8834 +/- 0.0246 |
-----|-----|-----|
g_re= 0.0329 +/- 0.0045 | g_re= -0.0423 +/- 0.0101 | g_re= -0.1672 +/- 0.0149 |
g_im= 0.0906 +/- 0.0093 | g_im= -0.2293 +/- 0.0252 | g_im= 0.0641 +/- 0.0190 |
corr= [ 0.38] | corr= [ 0.13] | corr= [-0.80] |
*****

```

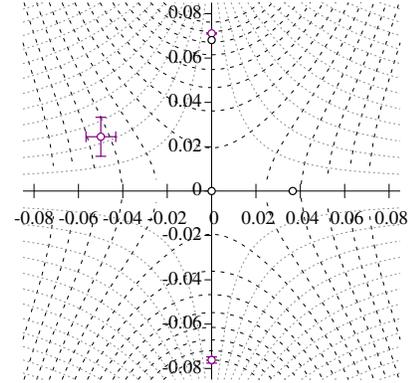
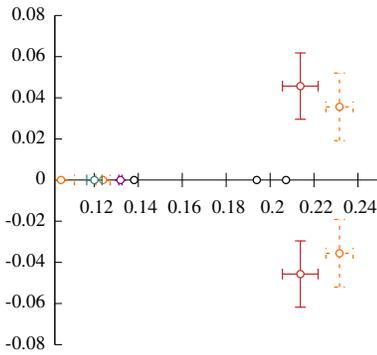
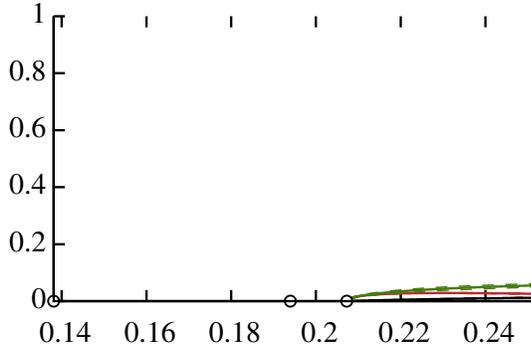
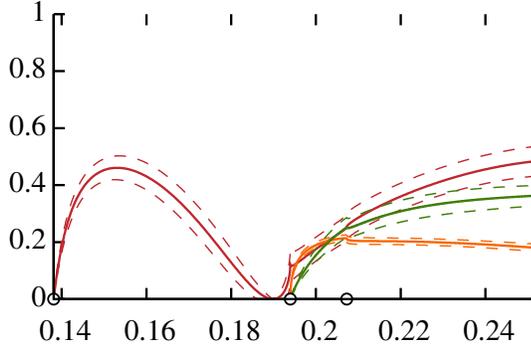
\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.12473 +/- 0.0028506)  
+ (i/2)\*(+2.8237e-16 +/- 7.9998e-14) [ 0.03]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= -0.0828 +/- 0.0011	k_im= -0.0743 +/- 0.0012	k_im= -0.0297 +/- 0.0030
corr= [-0.03]	corr= [-0.03]	corr= [-0.03]
g = 0.0187 +/- 0.0007	g = 0.0156 +/- 0.0012	g = 0.0961 +/- 0.0011
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000
g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000
g_im= 0.0187 +/- 0.0007	g_im= -0.0156 +/- 0.0012	g_im= -0.0961 +/- 0.0011
corr= [-1.00]	corr= [-0.64]	corr= [ 0.02]

\*\*\*\*\*

# k\_inv\_poly\_lcclcc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 45.78 / (57 - 8) = 0.93$

JP0+_c_eta:eta/1^S_0 eta:eta/1^S_0_order0	21.054 +/- 0.48523	1.00	0.60	0.09	0.06	-0.15	-0.05	-0.06	0.00
JP0+_c_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	8.6619 +/- 0.1414	1.00	0.09	0.46	0.47	-0.20	0.11	-0.10	
JP0+_c_eta:eta/1^S_0 pi:pi/1^S_0_order0	2.1660 +/- 0.11335			1.00	-0.05	-0.02	0.70	-0.08	0.22
JP0+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	3.3032 +/- 0.057687				1.00	-0.12	0.11	-0.08	0.03
JP0+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order1	0.026445 +/- 0.076432					1.00	-0.21	0.39	-0.25
JP0+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	1.3995 +/- 0.047062						1.00	0.29	-0.08
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order0	1.2344 +/- 0.10374							1.00	-0.86
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order1	-1.0201 +/- 0.1044								1.00

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13189 \pm 0.00073397) + (i/2)*(+3.5631e-12 \pm 1.0595e-09) [0.06]$

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0000 +/- 0.0000	k_im= 0.0800 +/- 0.0003	k_re= 0.0000 +/- 0.0000	k_im= 0.0711 +/- 0.0003	k_re= 0.0000 +/- 0.0000	k_im= 0.0205 +/- 0.0012
corr= [-0.06]		corr= [-0.06]		corr= [-0.06]	
g = 0.0476 +/- 0.0056	g = 0.1422 +/- 0.0124	g = 0.0946 +/- 0.0028			
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000	arg(g)/pi= -0.0000 +/- 0.0000			
g_re= 0.0476 +/- 0.0056	g_re= -0.1422 +/- 0.0124	g_re= 0.0946 +/- 0.0028			
g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_im= -0.0000 +/- 0.0000			
corr= [-1.00]	corr= [0.96]	corr= [-0.12]			

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

$\text{sqrt}(s)_{\text{pole}} = (0.21376 \pm 0.0081252) + (i/2)*(-0.045664 \pm 0.016128) [0.41]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
---------------	-----------------	-------------

```

=====
k_re= -0.0391 +/- 0.0069 | k_re= -0.0499 +/- 0.0067 | k_re= 0.0821 +/- 0.0051 |
k_im= 0.0312 +/- 0.0102 | k_im= 0.0245 +/- 0.0088 | k_im= -0.0149 +/- 0.0053 |
corr= [ 0.19] | corr= [ 0.33] | corr= [ 0.41] |
=====
|g|= 0.0951 +/- 0.0173 | |g|= 0.2462 +/- 0.0499 | |g|= 0.1963 +/- 0.0407 |
arg(g)/pi= 0.2778 +/- 0.0632 | arg(g)/pi= -0.6551 +/- 0.0686 | arg(g)/pi= 0.7371 +/- 0.0977 |
=====
g_re= 0.0611 +/- 0.0227 | g_re= -0.1152 +/- 0.0629 | g_re= -0.1331 +/- 0.0440 |
g_im= 0.0728 +/- 0.0117 | g_im= -0.2175 +/- 0.0367 | g_im= 0.1443 +/- 0.0580 |
corr= [ 0.01] | corr= [ 0.30] | corr= [ 0.41] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0+| kaon:kaon/1^S\_0-| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.12001 +/- 0.0034817)  
+ (i/2)\*(+3.7087e-17 +/- 6.8459e-14) [-0.12]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= 0.0845 +/- 0.0012 | k_im= -0.0762 +/- 0.0014 | k_im= -0.0342 +/- 0.0031 |
corr= [ 0.11] | corr= [ 0.11] | corr= [ 0.11] |
=====
|g|= 0.0189 +/- 0.0008 | |g|= 0.0234 +/- 0.0019 | |g|= 0.0952 +/- 0.0015 |
arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 |
=====
g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 |
g_im= 0.0189 +/- 0.0008 | g_im= -0.0234 +/- 0.0019 | g_im= -0.0952 +/- 0.0015 |
corr= [-1.00] | corr= [-0.40] | corr= [-0.10] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0+|

sqrt(s)\_pole = (0.14355 +/- 0.011819)  
+ (i/2)\*(-0.11669 +/- 0.0079812) [-0.78]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0249 +/- 0.0044 | k_re= -0.0274 +/- 0.0049 | k_re= -0.0433 +/- 0.0072 |
k_im= -0.0840 +/- 0.0033 | k_im= 0.0765 +/- 0.0033 | k_im= 0.0484 +/- 0.0020 |
corr= [ 0.92] | corr= [ 0.91] | corr= [ 0.67] |
=====
|g|= 0.0959 +/- 0.0081 | |g|= 0.2352 +/- 0.0164 | |g|= 0.0821 +/- 0.0031 |
arg(g)/pi= 0.2806 +/- 0.0247 | arg(g)/pi= -0.7600 +/- 0.0256 | arg(g)/pi= 0.0078 +/- 0.0154 |
=====
g_re= 0.0610 +/- 0.0029 | g_re= -0.1714 +/- 0.0065 | g_re= 0.0821 +/- 0.0031 |
g_im= 0.0741 +/- 0.0106 | g_im= -0.1610 +/- 0.0242 | g_im= 0.0020 +/- 0.0040 |
corr= [-0.17] | corr= [-0.17] | corr= [ 0.67] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.23159 +/- 0.006201)  
+ (i/2)\*(-0.035569 +/- 0.016413) [-0.24]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0543 +/- 0.0069 | k_re= -0.0646 +/- 0.0057 | k_re= 0.0932 +/- 0.0039 |
k_im= -0.0190 +/- 0.0078 | k_im= 0.0159 +/- 0.0069 | k_im= -0.0111 +/- 0.0050 |
corr= [-0.33] | corr= [-0.31] | corr= [-0.26] |
=====
|g|= 0.0922 +/- 0.0093 | |g|= 0.2288 +/- 0.0252 | |g|= 0.1741 +/- 0.0222 |
arg(g)/pi= 0.3894 +/- 0.0151 | arg(g)/pi= -0.5583 +/- 0.0147 | arg(g)/pi= 0.8780 +/- 0.0298 |
=====
g_re= 0.0314 +/- 0.0054 | g_re= -0.0417 +/- 0.0113 | g_re= -0.1615 +/- 0.0202 |
g_im= 0.0866 +/- 0.0088 | g_im= -0.2250 +/- 0.0248 | g_im= 0.0651 +/- 0.0187 |
corr= [ 0.51] | corr= [ 0.33] | corr= [-0.35] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.10484 +/- 0.0060787)  
+ (i/2)\*(+1.1051e-13 +/- 3.2253e-11) [ 0.01]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= -0.0894 +/- 0.0018 | k_im= 0.0816 +/- 0.0020 | k_im= -0.0450 +/- 0.0035 |
corr= [-0.01] | corr= [-0.01] | corr= [-0.01] |
=====
|g|= 0.0520 +/- 0.0038 | |g|= 0.0941 +/- 0.0098 | |g|= 0.0614 +/- 0.0096 |
arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 |
=====
g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 |
g_im= 0.0520 +/- 0.0038 | g_im= -0.0941 +/- 0.0098 | g_im= -0.0614 +/- 0.0096 |
corr= [-1.00] | corr= [ 0.61] | corr= [-0.84] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0-| pi:pi/1^S\_0-|

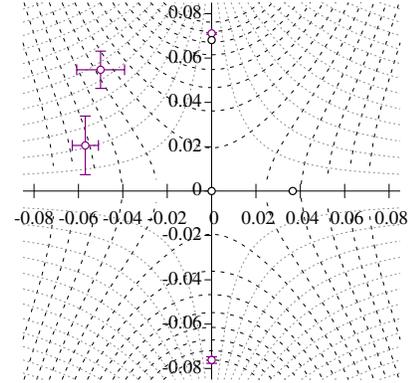
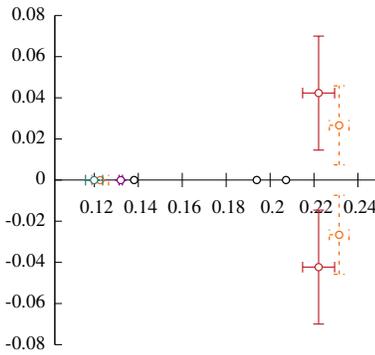
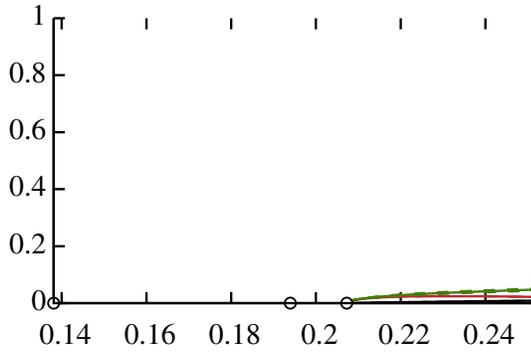
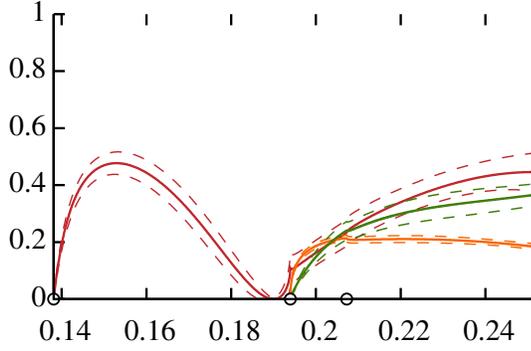
sqrt(s)\_pole = (0.12391 +/- 0.0032883)

+ (i/2)\*(+3.3232e-14 +/- 9.8989e-12) [-0.04]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= -0.0831 +/- 0.0012	k_im= -0.0746 +/- 0.0014	k_im= -0.0305 +/- 0.0033
corr= [ 0.04]	corr= [ 0.04]	corr= [ 0.04]
g = 0.0182 +/- 0.0007	g = 0.0155 +/- 0.0018	g = 0.0964 +/- 0.0011
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000
g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000
g_im= 0.0182 +/- 0.0007	g_im= -0.0155 +/- 0.0018	g_im= -0.0964 +/- 0.0011
corr= [-1.00]	corr= [-0.74]	corr= [-0.40]

\*\*\*\*\*

# k\_inv\_poly\_qccccc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 45.55 / (57 - 8) = 0.93$

JP0+_c_eta:eta/1^S_0 eta:eta/1^S_0_order0	22.708 +/- 0.586	1.00	0.76	0.08	0.06	-0.08	0.00	-0.05	0.04
JP0+_c_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	8.4871 +/- 0.14467	1.00	0.12	0.61	-0.15	-0.09	-0.08	0.11	
JP0+_c_eta:eta/1^S_0 pi:pi/1^S_0_order0	1.7877 +/- 0.13003		1.00	-0.03	0.64	-0.06	-0.07	0.17	
JP0+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	2.9483 +/- 0.060431			1.00	0.06	-0.02	-0.06	0.06	
JP0+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	1.1930 +/- 0.050375				1.00	0.40	0.14	-0.25	
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order0	1.0453 +/- 0.098014					1.00	-0.43	0.05	
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order1	-0.65331 +/- 0.22688						1.00	-0.89	
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order2	-0.22525 +/- 0.17121							1.00	

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = ( 0.132 \text{ +/- } 0.00075775) + (i/2)*(-1.3205\text{e-}15 \text{ +/- } 8.0364\text{e-}13) [ 0.05]$

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= 0.0799 +/- 0.0003	k_im= 0.0711 +/- 0.0004	k_im= 0.0203 +/- 0.0012			
corr= [-0.05]	corr= [-0.05]	corr= [-0.05]	corr= [-0.05]	corr= [-0.05]	corr= [-0.05]
g = 0.0448 +/- 0.0032	g = 0.1428 +/- 0.0080	g = 0.0957 +/- 0.0030			
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000	arg(g)/pi= -0.0000 +/- 0.0000			
g_re= 0.0448 +/- 0.0032	g_re= -0.1428 +/- 0.0080	g_re= 0.0957 +/- 0.0030			
g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_im= -0.0000 +/- 0.0000			
corr= [-1.00]	corr= [ 0.89]	corr= [-0.28]	corr= [-0.28]	corr= [-0.28]	corr= [-0.28]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

$\text{sqrt}(s)_{\text{pole}} = (0.19685 \text{ +/- } 0.01718) + (i/2)*(-0.11126 \text{ +/- } 0.019965) [-0.04]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
---------------	-----------------	-------------

```

=====
k_re= -0.0444 +/- 0.0101 | k_re= -0.0500 +/- 0.0108 | k_re= 0.0742 +/- 0.0105 |
k_im= 0.0616 +/- 0.0088 | k_im= 0.0547 +/- 0.0084 | k_im= -0.0369 +/- 0.0063 |
corr= [ 0.48] | corr= [ 0.44] | corr= [ 0.17] |
=====
|g|= 0.0880 +/- 0.0274 | |g|= 0.2728 +/- 0.0798 | |g|= 0.2264 +/- 0.0910 |
arg(g)/pi= -0.0394 +/- 0.0850 | arg(g)/pi= -0.9926 +/- 0.0716 | arg(g)/pi= 0.2494 +/- 0.0628 |
=====
g_re= 0.0874 +/- 0.0257 | g_re= -0.2727 +/- 0.0806 | g_re= 0.1604 +/- 0.0760 |
g_im= -0.0109 +/- 0.0254 | g_im= -0.0064 +/- 0.0604 | g_im= 0.1598 +/- 0.0671 |
corr= [-0.57] | corr= [-0.55] | corr= [ 0.62] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0+| kaon:kaon/1^S\_0+| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.22208 +/- 0.0072935)  
+ (i/2)\*(-0.042279 +/- 0.027701) [ 0.43]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0461 +/- 0.0070 | k_re= -0.0569 +/- 0.0059 | k_re= 0.0873 +/- 0.0044 |
k_im= 0.0255 +/- 0.0150 | k_im= 0.0206 +/- 0.0132 | k_im= -0.0134 +/- 0.0088 |
corr= [-0.23] | corr= [ 0.05] | corr= [ 0.36] |
=====
|g|= 0.0821 +/- 0.0327 | |g|= 0.2307 +/- 0.1001 | |g|= 0.2056 +/- 0.0865 |
arg(g)/pi= 0.3807 +/- 0.0633 | arg(g)/pi= -0.5551 +/- 0.0684 | arg(g)/pi= 0.8546 +/- 0.0937 |
=====
g_re= 0.0301 +/- 0.0214 | g_re= -0.0397 +/- 0.0554 | g_re= -0.1845 +/- 0.0641 |
g_im= 0.0764 +/- 0.0296 | g_im= -0.2273 +/- 0.0970 | g_im= 0.0907 +/- 0.0839 |
corr= [ 0.58] | corr= [ 0.44] | corr= [-0.66] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0+| kaon:kaon/1^S\_0-| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.11989 +/- 0.0039274)  
+ (i/2)\*(-8.5404e-16 +/- 9.4374e-14) [ 0.06]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= 0.0845 +/- 0.0014 | k_im= -0.0762 +/- 0.0015 | k_im= -0.0343 +/- 0.0034 |
corr= [-0.06] | corr= [-0.06] | corr= [-0.06] |
=====
|g|= 0.0157 +/- 0.0007 | |g|= 0.0233 +/- 0.0012 | |g|= 0.0929 +/- 0.0025 |
arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 |
=====
g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 |
g_im= 0.0157 +/- 0.0007 | g_im= -0.0233 +/- 0.0012 | g_im= -0.0929 +/- 0.0025 |
corr= [-1.00] | corr= [-0.09] | corr= [ 0.27] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0+|

sqrt(s)\_pole = (0.13291 +/- 0.0038793)  
+ (i/2)\*(-0.11126 +/- 0.0080107) [-0.89]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0213 +/- 0.0022 | k_re= -0.0233 +/- 0.0024 | k_re= -0.0370 +/- 0.0030 |
k_im= -0.0869 +/- 0.0006 | k_im= 0.0794 +/- 0.0006 | k_im= 0.0500 +/- 0.0011 |
corr= [ 0.45] | corr= [ 0.31] | corr= [-0.70] |
=====
|g|= 0.0872 +/- 0.0038 | |g|= 0.2343 +/- 0.0080 | |g|= 0.0854 +/- 0.0035 |
arg(g)/pi= 0.2580 +/- 0.0045 | arg(g)/pi= -0.7761 +/- 0.0039 | arg(g)/pi= 0.0512 +/- 0.0191 |
=====
g_re= 0.0601 +/- 0.0029 | g_re= -0.1787 +/- 0.0069 | g_re= 0.0843 +/- 0.0030 |
g_im= 0.0632 +/- 0.0028 | g_im= -0.1516 +/- 0.0051 | g_im= 0.0137 +/- 0.0054 |
corr= [ 0.81] | corr= [ 0.77] | corr= [ 0.55] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.094486 +/- 0.0056375)  
+ (i/2)\*(+1.9942e-15 +/- 1.0347e-12) [ 0.03]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= -0.0922 +/- 0.0014 | k_im= 0.0847 +/- 0.0016 | k_im= -0.0504 +/- 0.0026 |
corr= [-0.03] | corr= [-0.03] | corr= [-0.03] |
=====
|g|= 0.0497 +/- 0.0037 | |g|= 0.1036 +/- 0.0084 | |g|= 0.0468 +/- 0.0063 |
arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 |
=====
g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 |
g_im= 0.0497 +/- 0.0037 | g_im= -0.1036 +/- 0.0084 | g_im= -0.0468 +/- 0.0063 |
corr= [-1.00] | corr= [ 0.82] | corr= [-0.33] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.23144 +/- 0.0044408)

+ (i/2)\*(-0.026606 +/- 0.019184) [-0.48]

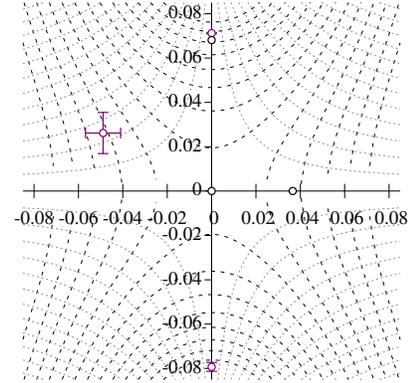
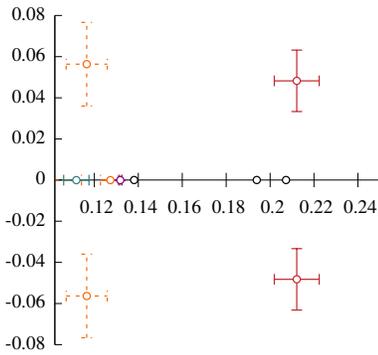
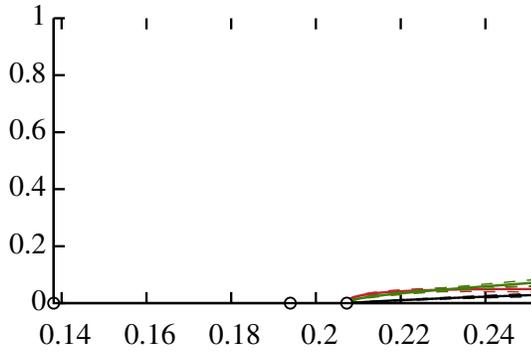
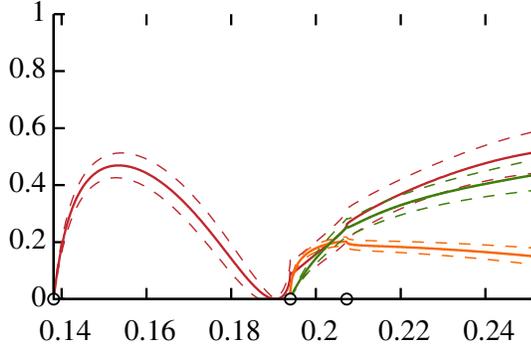
eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0531 +/- 0.0059	k_re= -0.0639 +/- 0.0046	k_re= 0.0930 +/- 0.0028
k_im= -0.0145 +/- 0.0094	k_im= 0.0120 +/- 0.0082	k_im= -0.0083 +/- 0.0059
corr= [-0.67]	corr= [-0.61]	corr= [-0.52]
g = 0.0748 +/- 0.0118	g = 0.2025 +/- 0.0344	g = 0.1628 +/- 0.0288
arg(g)/pi= 0.4123 +/- 0.0181	arg(g)/pi= -0.5410 +/- 0.0189	arg(g)/pi= 0.9146 +/- 0.0321
g_re= 0.0204 +/- 0.0050	g_re= -0.0260 +/- 0.0122	g_re= -0.1570 +/- 0.0245
g_im= 0.0720 +/- 0.0115	g_im= -0.2008 +/- 0.0343	g_im= 0.0431 +/- 0.0223
corr= [ 0.49]	corr= [ 0.21]	corr= [-0.85]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.12264 +/- 0.0037997)  
+ (i/2)\*(-9.3408e-14 +/- 2.7958e-11) [-0.00]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000
k_im= -0.0836 +/- 0.0014	k_im= -0.0751 +/- 0.0016	k_im= -0.0318 +/- 0.0037
corr= [ 0.00]	corr= [ 0.00]	corr= [ 0.00]
g = 0.0153 +/- 0.0006	g = 0.0173 +/- 0.0012	g = 0.0941 +/- 0.0018
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000
g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000
g_im= 0.0153 +/- 0.0006	g_im= -0.0173 +/- 0.0012	g_im= -0.0941 +/- 0.0018
corr= [-1.00]	corr= [-0.48]	corr= [ 0.04]

# k\_inv\_poly\_lcccc1



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 45.23 / (57 - 8) = 0.92$

JP0+_c_eta:eta/1^S_0 eta:eta/1^S_0_order0	26.962 +/- 1.1848	1.00	-0.25	0.73	0.38	0.10	-0.20	-0.13	-0.15
JP0+_c_eta:eta/1^S_0 eta:eta/1^S_0_order1	-1.2133 +/- 0.7769	1.00	0.37	0.32	0.02	-0.28	-0.12	-0.13	
JP0+_c_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	10.534 +/- 0.27373			1.00	0.52	0.42	-0.28	-0.25	-0.17
JP0+_c_eta:eta/1^S_0 pi:pi/1^S_0_order0	7.6914 +/- 0.21321				1.00	-0.06	0.37	0.19	0.22
JP0+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	4.0796 +/- 0.072748					1.00	0.21	-0.13	-0.06
JP0+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	3.6692 +/- 0.068302						1.00	0.67	0.18
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order0	3.3208 +/- 0.11506							1.00	-0.48
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order1	-0.98255 +/- 0.11719								1.00

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.1318 \pm 0.00073782) + (i/2)(-3.8924e-16 \pm 7.3951e-14) [0.04]$

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= -0.0000 +/- 0.0000	k_im= 0.0800 +/- 0.0003	k_re= -0.0000 +/- 0.0000	k_im= 0.0712 +/- 0.0003	k_re= -0.0000 +/- 0.0000	k_im= 0.0207 +/- 0.0012
corr= [-0.04]		corr= [-0.04]		corr= [-0.04]	
g = 0.0249 +/- 0.0034	arg(g)/pi= 0.0000 +/- 0.0000	g = 0.1334 +/- 0.0074	arg(g)/pi= 1.0000 +/- 0.0000	g = 0.0955 +/- 0.0030	arg(g)/pi= -0.0000 +/- 0.0000
g_re= 0.0249 +/- 0.0034	g_im= 0.0000 +/- 0.0000	g_re= -0.1334 +/- 0.0074	g_im= 0.0000 +/- 0.0000	g_re= 0.0955 +/- 0.0030	g_im= -0.0000 +/- 0.0000
corr= [-1.00]		corr= [0.88]		corr= [-0.36]	

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

$\text{sqrt}(s)_{\text{pole}} = (0.21216 \pm 0.010229) + (i/2)(-0.048246 \pm 0.014918) [0.59]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
---------------	-----------------	-------------

```

=====
k_re= -0.0384 +/- 0.0072 | k_re= -0.0489 +/- 0.0079 | k_re= 0.0812 +/- 0.0064 |
k_im= 0.0333 +/- 0.0112 | k_im= 0.0262 +/- 0.0093 | k_im= -0.0158 +/- 0.0051 |
corr= [ 0.53] | corr= [ 0.63] | corr= [ 0.62] |
=====
|g|= 0.0910 +/- 0.0101 | |g|= 0.2296 +/- 0.0395 | |g|= 0.1937 +/- 0.0327 |
arg(g)/pi= 0.1118 +/- 0.0835 | arg(g)/pi= -0.6791 +/- 0.0909 | arg(g)/pi= 0.7066 +/- 0.1246 |
=====
g_re= 0.0855 +/- 0.0128 | g_re= -0.1225 +/- 0.0666 | g_re= -0.1171 +/- 0.0621 |
g_im= 0.0313 +/- 0.0226 | g_im= -0.1942 +/- 0.0378 | g_im= 0.1543 +/- 0.0544 |
corr= [-0.54] | corr= [-0.32] | corr= [ 0.68] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0+| kaon:kaon/1^S\_0-| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.11176 +/- 0.0057627)  
+ (i/2)\*(-1.1298e-14 +/- 3.187e-12) [ 0.06]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= 0.0873 +/- 0.0018 | k_im= -0.0793 +/- 0.0020 | k_im= -0.0406 +/- 0.0040 |
corr= [-0.06] | corr= [-0.06] | corr= [-0.06] |
=====
|g|= 0.0356 +/- 0.0021 | |g|= 0.0266 +/- 0.0018 | |g|= 0.0893 +/- 0.0049 |
arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 |
=====
g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 |
g_im= 0.0356 +/- 0.0021 | g_im= -0.0266 +/- 0.0018 | g_im= -0.0893 +/- 0.0049 |
corr= [-1.00] | corr= [-0.52] | corr= [ 0.48] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0+|

sqrt(s)\_pole = (0.11651 +/- 0.0093712)  
+ (i/2)\*(-0.056317 +/- 0.020323) [-0.92]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0094 +/- 0.0043 | k_re= -0.0103 +/- 0.0047 | k_re= -0.0187 +/- 0.0085 |
k_im= -0.0874 +/- 0.0020 | k_im= 0.0795 +/- 0.0021 | k_im= 0.0439 +/- 0.0019 |
corr= [ 0.86] | corr= [ 0.85] | corr= [ 0.44] |
=====
|g|= 0.0787 +/- 0.0028 | |g|= 0.2292 +/- 0.0093 | |g|= 0.0775 +/- 0.0071 |
arg(g)/pi= 0.2768 +/- 0.0222 | arg(g)/pi= -0.7815 +/- 0.0104 | arg(g)/pi= 0.0554 +/- 0.0745 |
=====
g_re= 0.0508 +/- 0.0031 | g_re= -0.1773 +/- 0.0075 | g_re= 0.0763 +/- 0.0041 |
g_im= 0.0601 +/- 0.0053 | g_im= -0.1453 +/- 0.0093 | g_im= 0.0134 +/- 0.0190 |
corr= [-0.78] | corr= [ 0.26] | corr= [ 0.86] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.23603 +/- 0.010868)  
+ (i/2)\*(-0.093602 +/- 0.052979) [ 0.09]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0662 +/- 0.0102 | k_re= -0.0734 +/- 0.0089 | k_re= 0.0971 +/- 0.0065 |
k_im= -0.0417 +/- 0.0195 | k_im= 0.0376 +/- 0.0189 | k_im= -0.0285 +/- 0.0157 |
corr= [-0.52] | corr= [-0.42] | corr= [-0.10] |
=====
|g|= 0.1200 +/- 0.0167 | |g|= 0.2706 +/- 0.0618 | |g|= 0.2636 +/- 0.0937 |
arg(g)/pi= 0.2523 +/- 0.0719 | arg(g)/pi= -0.5256 +/- 0.1227 | arg(g)/pi= 0.8881 +/- 0.0663 |
=====
g_re= 0.0842 +/- 0.0171 | g_re= -0.0217 +/- 0.1012 | g_re= -0.2475 +/- 0.1002 |
g_im= 0.0855 +/- 0.0269 | g_im= -0.2697 +/- 0.0668 | g_im= 0.0907 +/- 0.0418 |
corr= [-0.50] | corr= [-0.63] | corr= [ 0.10] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.098964 +/- 0.015174)  
+ (i/2)\*(+1.4552e-13 +/- 4.4657e-11) [-0.03]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= -0.0911 +/- 0.0041 | k_im= 0.0834 +/- 0.0045 | k_im= -0.0482 +/- 0.0078 |
corr= [ 0.03] | corr= [ 0.03] | corr= [ 0.03] |
=====
|g|= 0.0680 +/- 0.0117 | |g|= 0.1282 +/- 0.0161 | |g|= 0.0326 +/- 0.0171 |
arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 |
=====
g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 |
g_im= 0.0680 +/- 0.0117 | g_im= -0.1282 +/- 0.0161 | g_im= -0.0326 +/- 0.0171 |
corr= [-1.00] | corr= [ 0.85] | corr= [-0.83] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0-|

sqrt(s)\_pole = ( 0.1873 +/- 0.013178)

+ (i/2)\*(-0.14531 +/- 0.032573) [ 0.71]

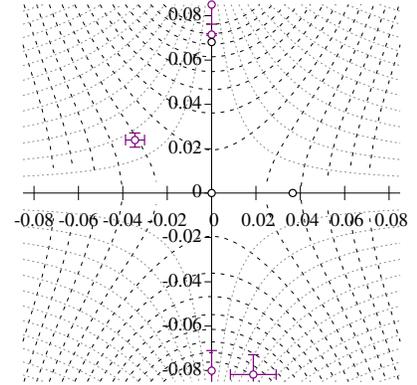
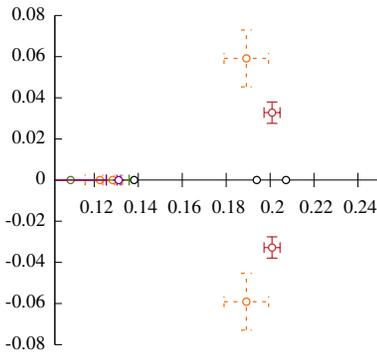
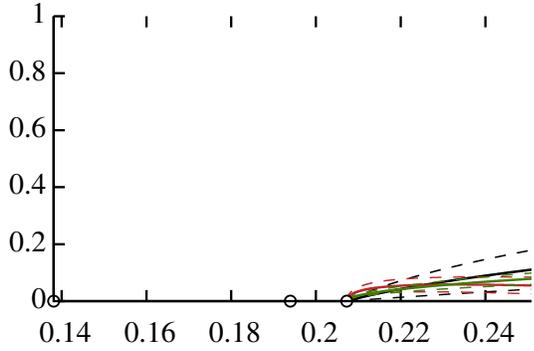
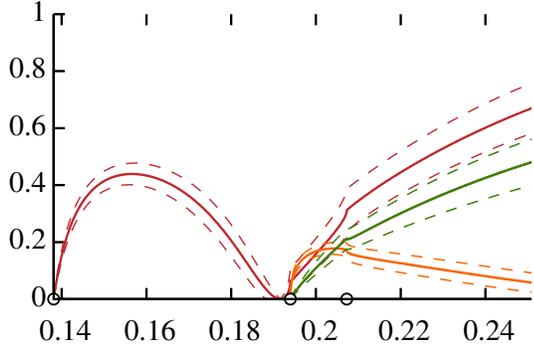
eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0462 +/- 0.0045	k_re= -0.0506 +/- 0.0047	k_re= 0.0707 +/- 0.0062
k_im= -0.0736 +/- 0.0112	k_im= 0.0672 +/- 0.0116	k_im= -0.0481 +/- 0.0106
corr= [-0.01]	corr= [ 0.17]	corr= [ 0.61]
g = 0.0968 +/- 0.0424	g = 0.3295 +/- 0.0844	g = 0.2282 +/- 0.0716
arg(g)/pi= -0.1033 +/- 0.0899	arg(g)/pi= -0.9487 +/- 0.0639	arg(g)/pi= 0.2855 +/- 0.1359
g_re= 0.0918 +/- 0.0434	g_re= -0.3253 +/- 0.0763	g_re= 0.1423 +/- 0.0582
g_im= -0.0309 +/- 0.0257	g_im= -0.0529 +/- 0.0752	g_im= 0.1783 +/- 0.1059
corr= [-0.06]	corr= [ 0.71]	corr= [-0.51]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.12726 +/- 0.0044819)  
+ (i/2)\*(-3.171e-17 +/- 6.1485e-14) [ 0.02]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000
k_im= -0.0818 +/- 0.0017	k_im= -0.0732 +/- 0.0019	k_im= -0.0268 +/- 0.0053
corr= [-0.02]	corr= [-0.02]	corr= [-0.02]
g = 0.0353 +/- 0.0017	g = 0.0144 +/- 0.0032	g = 0.0923 +/- 0.0020
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000
g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000
g_im= 0.0353 +/- 0.0017	g_im= -0.0144 +/- 0.0032	g_im= -0.0923 +/- 0.0020
corr= [-1.00]	corr= [-0.92]	corr= [ 0.31]

# k\_inv\_poly\_clcccc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 48.58 / (57 - 7) = 0.97$

JP0+_c_eta:eta/1^S_0 eta:eta/1^S_0_order0	-1.4904 +/- 0.76003	1.00	0.94	-0.26	0.52	0.34	-0.39	-0.46
JP0+_c_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	-0.75307 +/- 0.34193	1.00	-0.31	0.75	0.26	-0.41	-0.40	
JP0+_c_eta:eta/1^S_0 pi:pi/1^S_0_order0	0.45490 +/- 0.12681		1.00	-0.27	0.64	-0.13	-0.50	
JP0+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	-0.68465 +/- 0.18458			1.00	0.00	-0.35	-0.16	
JP0+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	-0.69786 +/- 0.14159				1.00	-0.73	-0.93	
JP0+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order1	0.37477 +/- 0.10791					1.00	0.68	
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order0	0.18775 +/- 0.090049						1.00	

## pole singularities

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.1311 \pm 0.00082249) + (i/2)*(-1.073e-12 \pm 3.1144e-10) [-0.01]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= 0.0803 +/- 0.0003	k_im= 0.0715 +/- 0.0004	k_im= 0.0217 +/- 0.0012
corr= [ 0.01]	corr= [ 0.01]	corr= [ 0.01]
g = 0.0288 +/- 0.0198	g = 0.0656 +/- 0.0111	g = 0.0917 +/- 0.0018
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.0288 +/- 0.0198	g_re= -0.0656 +/- 0.0111	g_re= -0.0917 +/- 0.0018
g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000
corr= [-1.00]	corr= [-0.91]	corr= [ 0.17]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.09312 \pm 0.032311) + (i/2)*(+2.7966e-15 \pm 8.3367e-13) [-0.02]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
---------------	-----------------	-------------

```

k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= 0.0926 +/- 0.0081 | k_im= 0.0851 +/- 0.0088 | k_im= 0.0510 +/- 0.0148 |
corr= [ 0.02] | corr= [ 0.02] | corr= [ 0.02] |
-----
|g|= 0.0709 +/- 0.0304 | |g|= 0.0447 +/- 0.0290 | |g|= 0.0038 +/- 0.0153 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 |
-----
g_re= 0.0709 +/- 0.0304 | g_re= 0.0447 +/- 0.0290 | g_re= -0.0038 +/- 0.0153 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [ 0.21] | corr= [-0.98] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = ( 0.2009 +/- 0.003639)  
+ (i/2)\*(-0.032771 +/- 0.0051933) [-0.13]

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----
k_re= -0.0232 +/- 0.0038 | k_re= -0.0345 +/- 0.0043 | k_re= 0.0733 +/- 0.0025 |
k_im= 0.0355 +/- 0.0037 | k_im= 0.0239 +/- 0.0032 | k_im= -0.0112 +/- 0.0017 |
corr= [ 0.35] | corr= [ 0.23] | corr= [-0.08] |
-----
|g|= 0.0876 +/- 0.0194 | |g|= 0.1355 +/- 0.0112 | |g|= 0.1058 +/- 0.0105 |
arg(g)/pi= 0.0899 +/- 0.0361 | arg(g)/pi= -0.8298 +/- 0.0178 | arg(g)/pi= -0.3924 +/- 0.0152 |
-----
g_re= 0.0842 +/- 0.0196 | g_re= -0.1166 +/- 0.0098 | g_re= 0.0351 +/- 0.0070 |
g_im= 0.0244 +/- 0.0095 | g_im= -0.0690 +/- 0.0094 | g_im= -0.0998 +/- 0.0094 |
corr= [ 0.14] | corr= [ 0.41] | corr= [-0.66] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.093257 +/- 0.032178)  
+ (i/2)\*(+5.9586e-18 +/- 1.7847e-15) [-0.02]

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----
k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= 0.0926 +/- 0.0081 | k_im= 0.0850 +/- 0.0088 | k_im= -0.0509 +/- 0.0147 |
corr= [ 0.02] | corr= [ 0.02] | corr= [ 0.02] |
-----
|g|= 0.0697 +/- 0.0295 | |g|= 0.0476 +/- 0.0288 | |g|= 0.0029 +/- 0.0114 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 |
-----
g_re= 0.0697 +/- 0.0295 | g_re= 0.0476 +/- 0.0288 | g_re= 0.0029 +/- 0.0114 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [ 0.51] | corr= [-0.98] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

sqrt(s)\_pole = ( 0.1092 +/- 0.026593)  
+ (i/2)\*(+5.075e-16 +/- 1.5183e-13) [-0.01]

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----
k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= 0.0881 +/- 0.0082 | k_im= -0.0801 +/- 0.0091 | k_im= 0.0423 +/- 0.0172 |
corr= [ 0.01] | corr= [ 0.01] | corr= [ 0.02] |
-----
|g|= 0.0920 +/- 0.0183 | |g|= 0.0176 +/- 0.0090 | |g|= 0.0541 +/- 0.0275 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 |
-----
g_re= 0.0920 +/- 0.0183 | g_re= -0.0176 +/- 0.0090 | g_re= -0.0541 +/- 0.0275 |
g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [-0.93] | corr= [-0.63] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.12181 +/- 0.031756)  
+ (i/2)\*(-0.10108 +/- 0.027114) [-0.55]

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----
k_re= -0.0172 +/- 0.0092 | k_re= 0.0188 +/- 0.0103 | k_re= 0.0302 +/- 0.0170 |
k_im= 0.0893 +/- 0.0084 | k_im= -0.0818 +/- 0.0089 | k_im= -0.0511 +/- 0.0089 |
corr= [ 0.79] | corr= [ 0.79] | corr= [ 0.68] |
-----
|g|= 0.1135 +/- 0.0459 | |g|= 0.0656 +/- 0.0200 | |g|= 0.1062 +/- 0.0400 |
arg(g)/pi= -0.1923 +/- 0.1004 | arg(g)/pi= 0.5215 +/- 0.0528 | arg(g)/pi= -0.6405 +/- 0.0411 |
-----
g_re= 0.0934 +/- 0.0542 | g_re= -0.0044 +/- 0.0114 | g_re= -0.0454 +/- 0.0233 |
g_im= -0.0645 +/- 0.0212 | g_im= 0.0654 +/- 0.0197 | g_im= -0.0960 +/- 0.0353 |
corr= [ 0.03] | corr= [-0.43] | corr= [ 0.76] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = ( 0.1283 +/- 0.0044961)  
+ (i/2)\*(+7.2508e-15 +/- 2.1634e-12) [-0.01]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000
k_im= -0.0814 +/- 0.0018	k_im= 0.0727 +/- 0.0020	k_im= 0.0256 +/- 0.0056
corr= [ 0.01]	corr= [ 0.01]	corr= [ 0.01]
g = 0.0096 +/- 0.0095	g = 0.0884 +/- 0.0093	g = 0.0879 +/- 0.0027
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.0096 +/- 0.0095	g_re= -0.0884 +/- 0.0093	g_re= -0.0879 +/- 0.0027
g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000
corr= [-1.00]	corr= [ 0.79]	corr= [ 0.13]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.18918 +/- 0.010151)  
 + (i/2)\*(-0.05912 +/- 0.013788) [ 0.13]

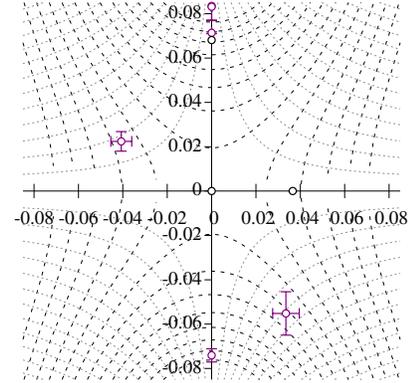
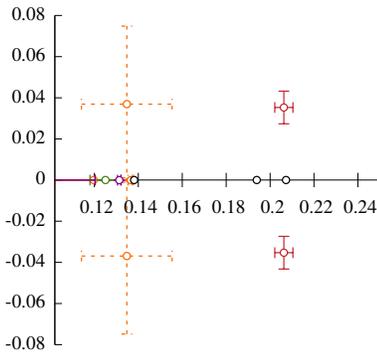
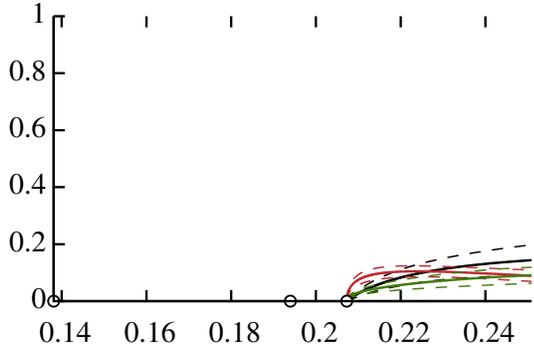
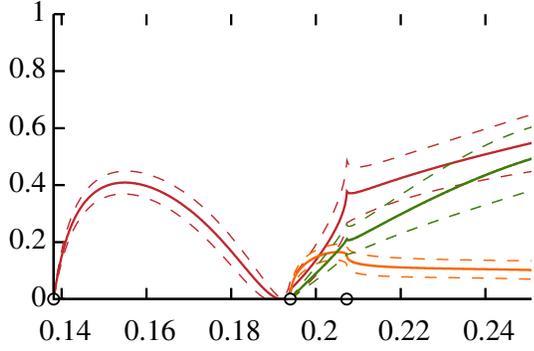
eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0268 +/- 0.0062	k_re= -0.0332 +/- 0.0074	k_re= 0.0664 +/- 0.0068
k_im= -0.0522 +/- 0.0078	k_im= 0.0421 +/- 0.0081	k_im= -0.0211 +/- 0.0049
corr= [ 0.32]	corr= [ 0.38]	corr= [ 0.24]
g = 0.0706 +/- 0.0124	g = 0.1800 +/- 0.0113	g = 0.1242 +/- 0.0140
arg(g)/pi= -0.0822 +/- 0.1012	arg(g)/pi= -0.8957 +/- 0.0457	arg(g)/pi= -0.4217 +/- 0.0413
g_re= 0.0682 +/- 0.0142	g_re= -0.1704 +/- 0.0130	g_re= 0.0302 +/- 0.0166
g_im= -0.0180 +/- 0.0213	g_im= -0.0579 +/- 0.0250	g_im= -0.1204 +/- 0.0134
corr= [ 0.43]	corr= [-0.45]	corr= [-0.11]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.12249 +/- 0.0066945)  
 + (i/2)\*(+1.5948e-18 +/- 4.7803e-16) [ 0.03]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= -0.0836 +/- 0.0025	k_im= -0.0752 +/- 0.0027	k_im= -0.0319 +/- 0.0064
corr= [-0.03]	corr= [-0.03]	corr= [-0.03]
g = 0.0278 +/- 0.0046	g = 0.0414 +/- 0.0058	g = 0.1062 +/- 0.0019
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000	arg(g)/pi= 0.5000 +/- 0.0000
g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000
g_im= 0.0278 +/- 0.0046	g_im= -0.0414 +/- 0.0058	g_im= 0.1062 +/- 0.0019
corr= [-1.00]	corr= [-0.86]	corr= [-0.60]

# k\_inv\_poly\_ccclcc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 49.97 / (57 - 7) = 1.00$

JPO+_c_eta:eta/1^S_0 eta:eta/1^S_0_order0	-0.82356 +/- 0.20214	1.00	0.90	-0.49	0.17	-0.11	-0.15	0.02
JPO+_c_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	-0.53391 +/- 0.15528		1.00	-0.68	0.49	-0.39	-0.44	0.21
JPO+_c_eta:eta/1^S_0 pi:pi/1^S_0_order0	0.50181 +/- 0.082744			1.00	-0.59	0.53	0.81	-0.64
JPO+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	-1.5940 +/- 0.49116				1.00	-0.98	-0.86	0.43
JPO+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order1	0.77322 +/- 0.3513					1.00	0.82	-0.38
JPO+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	-0.14325 +/- 0.14701						1.00	-0.76
JPO+_c_pi:pi/1^S_0 pi:pi/1^S_0_order0	-0.015359 +/- 0.061282							1.00

## pole singularities

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13136 \pm 0.00081309) + (i/2)*(-9.6645e-13 \pm 2.7586e-10) [-0.01]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= 0.0802 +/- 0.0003	k_im= 0.0714 +/- 0.0004	k_im= 0.0213 +/- 0.0013
corr= [ 0.01]	corr= [ 0.01]	corr= [ 0.01]
g = 0.0398 +/- 0.0133	g = 0.0548 +/- 0.0186	g = 0.0897 +/- 0.0021
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.0398 +/- 0.0133	g_re= -0.0548 +/- 0.0186	g_re= -0.0897 +/- 0.0021
g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000
corr= [-1.00]	corr= [-0.94]	corr= [ 0.56]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.098693 \pm 0.021563) + (i/2)*(+1.4381e-12 \pm 4.275e-10) [-0.06]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0

k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000
k_im= 0.0911 +/- 0.0058	k_im= 0.0835 +/- 0.0064	k_im= 0.0483 +/- 0.0110
corr= [ 0.06]	corr= [ 0.06]	corr= [ 0.06]
-----		
g = 0.0502 +/- 0.0243	g = 0.0833 +/- 0.0248	g = 0.0138 +/- 0.0122
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= -0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000
-----		
g_re= 0.0502 +/- 0.0243	g_re= 0.0833 +/- 0.0248	g_re= -0.0138 +/- 0.0122
g_im= 0.0000 +/- 0.0000	g_im= -0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000
corr= [-1.00]	corr= [ 0.22]	corr= [-0.54]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.099977 +/- 0.020432)  
+ (i/2)\*(+4.7996e-14 +/- 1.4384e-11) [-0.06]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0000 +/- 0.0000	k_im= 0.0908 +/- 0.0056	k_re= 0.0000 +/- 0.0000	k_im= 0.0831 +/- 0.0062	k_re= -0.0000 +/- 0.0000	k_im= -0.0476 +/- 0.0107
corr= [ 0.06]		corr= [ 0.06]		corr= [ 0.06]	
-----					
g = 0.0444 +/- 0.0221	arg(g)/pi= 0.0000 +/- 0.0000	g = 0.0915 +/- 0.0226	arg(g)/pi= -0.0000 +/- 0.0000	g = 0.0095 +/- 0.0089	arg(g)/pi= -0.0000 +/- 0.0000
-----					
g_re= 0.0444 +/- 0.0221	g_im= 0.0000 +/- 0.0000	g_re= 0.0915 +/- 0.0226	g_im= -0.0000 +/- 0.0000	g_re= 0.0095 +/- 0.0089	g_im= -0.0000 +/- 0.0000
corr= [-1.00]		corr= [ 0.47]		corr= [-0.74]	

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.20627 +/- 0.0041458)  
+ (i/2)\*(-0.035272 +/- 0.007938) [-0.05]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= -0.0287 +/- 0.0050	k_im= 0.0317 +/- 0.0048	k_re= -0.0407 +/- 0.0047	k_im= 0.0224 +/- 0.0044	k_re= 0.0770 +/- 0.0028	k_im= -0.0118 +/- 0.0026
corr= [ 0.04]		corr= [ 0.00]		corr= [-0.04]	
-----					
g = 0.1504 +/- 0.0162	arg(g)/pi= 0.1269 +/- 0.0354	g = 0.1403 +/- 0.0225	arg(g)/pi= -0.7990 +/- 0.0516	g = 0.1262 +/- 0.0188	arg(g)/pi= -0.3299 +/- 0.0305
-----					
g_re= 0.1386 +/- 0.0179	g_im= 0.0584 +/- 0.0148	g_re= -0.1133 +/- 0.0211	g_im= -0.0829 +/- 0.0240	g_re= 0.0643 +/- 0.0116	g_im= -0.1086 +/- 0.0192
corr= [-0.23]		corr= [ 0.03]		corr= [-0.25]	

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.12504 +/- 0.0070406)  
+ (i/2)\*(+1.2868e-13 +/- 3.8537e-11) [-0.01]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0000 +/- 0.0000	k_im= 0.0827 +/- 0.0027	k_re= -0.0000 +/- 0.0000	k_im= -0.0741 +/- 0.0030	k_re= 0.0000 +/- 0.0000	k_im= 0.0293 +/- 0.0075
corr= [ 0.01]		corr= [ 0.01]		corr= [ 0.01]	
-----					
g = 0.0756 +/- 0.0088	arg(g)/pi= 0.0000 +/- 0.0000	g = 0.0113 +/- 0.0077	arg(g)/pi= 1.0000 +/- 0.0000	g = 0.0871 +/- 0.0053	arg(g)/pi= 1.0000 +/- 0.0000
-----					
g_re= 0.0756 +/- 0.0088	g_im= 0.0000 +/- 0.0000	g_re= -0.0113 +/- 0.0077	g_im= 0.0000 +/- 0.0000	g_re= -0.0871 +/- 0.0053	g_im= 0.0000 +/- 0.0000
corr= [-1.00]		corr= [-0.95]		corr= [-0.99]	

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.17789 +/- 0.013277)  
+ (i/2)\*(-0.083221 +/- 0.018563) [ 0.48]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= -0.0289 +/- 0.0052	k_im= 0.0640 +/- 0.0092	k_re= 0.0335 +/- 0.0060	k_im= -0.0552 +/- 0.0098	k_re= 0.0604 +/- 0.0081	k_im= -0.0306 +/- 0.0073
corr= [ 0.25]		corr= [ 0.37]		corr= [ 0.56]	
-----					
g = 0.1798 +/- 0.0165	arg(g)/pi= -0.0595 +/- 0.0444	g = 0.0602 +/- 0.0064	arg(g)/pi= 0.7256 +/- 0.0496	g = 0.1303 +/- 0.0117	arg(g)/pi= -0.4945 +/- 0.0358
-----					
g_re= 0.1766 +/- 0.0187	g_im= -0.0334 +/- 0.0235	g_re= -0.0392 +/- 0.0073	g_im= 0.0457 +/- 0.0087	g_re= 0.0023 +/- 0.0148	g_im= -0.1303 +/- 0.0116
corr= [ 0.52]		corr= [ 0.40]		corr= [-0.48]	

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.24822 +/- 0.027871)  
+ (i/2)\*(-0.14961 +/- 0.093191) [-0.89]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0809 +/- 0.0263	k_re= -0.0865 +/- 0.0243	k_re= -0.1057 +/- 0.0181
k_im= -0.0573 +/- 0.0238	k_im= 0.0537 +/- 0.0246	k_im= 0.0439 +/- 0.0248
corr= [-0.92]	corr= [-0.92]	corr= [-0.91]
g = 0.1107 +/- 0.0164	g = 0.2442 +/- 0.0504	g = 0.1021 +/- 0.0341
arg(g)/pi= 0.4274 +/- 0.0309	arg(g)/pi= -0.4991 +/- 0.0182	arg(g)/pi= 0.9825 +/- 0.0509
g_re= 0.0250 +/- 0.0108	g_re= 0.0007 +/- 0.0141	g_re= -0.1019 +/- 0.0347
g_im= 0.1078 +/- 0.0164	g_im= -0.2442 +/- 0.0504	g_im= 0.0056 +/- 0.0149
corr= [ 0.10]	corr= [-0.98]	corr= [ 0.73]

JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.11969 +/- 0.017513)  
+ (i/2)\*(+6.8186e-16 +/- 2.0343e-13) [-0.07]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000
k_im= -0.0846 +/- 0.0062	k_im= 0.0763 +/- 0.0069	k_im= 0.0345 +/- 0.0152
corr= [ 0.07]	corr= [ 0.07]	corr= [ 0.07]
g = 0.0191 +/- 0.0126	g = 0.1269 +/- 0.0127	g = 0.0497 +/- 0.0417
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.0191 +/- 0.0126	g_re= -0.1269 +/- 0.0127	g_re= -0.0497 +/- 0.0417
g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000
corr= [-1.00]	corr= [ 0.75]	corr= [-0.96]

JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.13477 +/- 0.020642)  
+ (i/2)\*(-0.036887 +/- 0.037938) [-0.92]

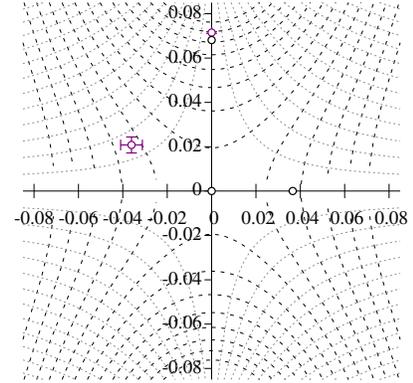
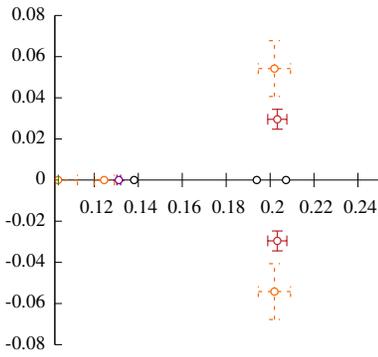
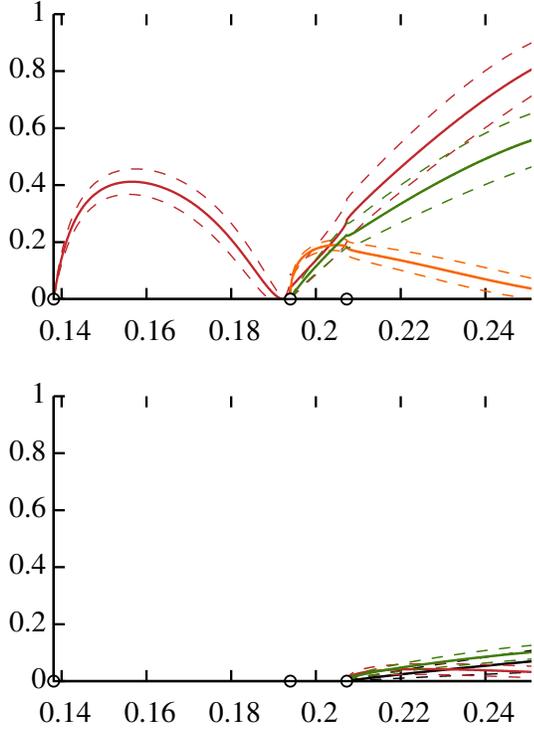
eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0078 +/- 0.0097	k_re= -0.0088 +/- 0.0111	k_re= 0.0220 +/- 0.0261
k_im= -0.0797 +/- 0.0069	k_im= 0.0709 +/- 0.0074	k_im= -0.0283 +/- 0.0052
corr= [ 0.91]	corr= [ 0.91]	corr= [ 0.17]
g = 0.0522 +/- 0.0073	g = 0.1428 +/- 0.0281	g = 0.0840 +/- 0.0171
arg(g)/pi= -0.2722 +/- 0.0457	arg(g)/pi= 0.8868 +/- 0.0963	arg(g)/pi= -0.4497 +/- 0.1689
g_re= 0.0342 +/- 0.0076	g_re= -0.1338 +/- 0.0406	g_re= 0.0132 +/- 0.0414
g_im= -0.0394 +/- 0.0072	g_im= 0.0497 +/- 0.0318	g_im= -0.0830 +/- 0.0237
corr= [ 0.02]	corr= [ 0.92]	corr= [ 0.99]

JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.13658 +/- 0.0012692)  
+ (i/2)\*(-6.2058e-17 +/- 1.8503e-14) [-0.04]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000
k_im= -0.0780 +/- 0.0006	k_im= -0.0689 +/- 0.0006	k_im= -0.0103 +/- 0.0042
corr= [ 0.04]	corr= [ 0.04]	corr= [ 0.04]
g = 0.0213 +/- 0.0036	g = 0.0098 +/- 0.0066	g = 0.0729 +/- 0.0134
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000	arg(g)/pi= 0.5000 +/- 0.0000
g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000
g_im= 0.0213 +/- 0.0036	g_im= -0.0098 +/- 0.0066	g_im= 0.0729 +/- 0.0134
corr= [-1.00]	corr= [-0.87]	corr= [ 0.56]

# k\_inv\_poly\_llcccc\_noCM



## parameter values

minimised with  $\text{chisq}/n\text{DoF} = 47.39 / (57 - 8) = 0.97$

JP0+_c_eta:eta/1^S_0 eta:eta/1^S_0_order0	-2.4294 +/- 0.86726	1.00	0.86	0.01	0.17	0.25	-0.06	-0.13	-0.11
JP0+_c_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	-1.1833 +/- 0.31432	1.00	-0.08	0.61	0.18	-0.17	-0.16	-0.02	
JP0+_c_eta:eta/1^S_0 pi:pi/1^S_0_order0	0.51449 +/- 0.17904		1.00	-0.10	0.57	0.18	0.16	-0.50	
JP0+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	-0.82296 +/- 0.18717			1.00	-0.08	-0.25	-0.04	0.04	
JP0+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	-0.91816 +/- 0.1314				1.00	-0.56	-0.61	0.15	
JP0+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order1	0.57724 +/- 0.11202					1.00	0.67	-0.50	
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order0	0.49371 +/- 0.13915						1.00	-0.83	
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order1	-0.22607 +/- 0.13551							1.00	

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13113 \pm 0.0008526) + (i/2)*(+1.5112e-12 \pm 4.4495e-10) [0.04]$

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0000 +/- 0.0000	k_im= 0.0803 +/- 0.0003	k_re= 0.0000 +/- 0.0000	k_im= 0.0715 +/- 0.0004	k_re= 0.0000 +/- 0.0000	k_im= 0.0217 +/- 0.0013
corr= [-0.04]		corr= [-0.04]		corr= [-0.04]	
g = 0.0331 +/- 0.0106	arg(g)/pi= 0.0000 +/- 0.0000	g = 0.0725 +/- 0.0073	arg(g)/pi= 1.0000 +/- 0.0000	g = 0.0894 +/- 0.0021	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.0331 +/- 0.0106	g_im= 0.0000 +/- 0.0000	g_re= -0.0725 +/- 0.0073	g_im= 0.0000 +/- 0.0000	g_re= -0.0894 +/- 0.0021	g_im= 0.0000 +/- 0.0000
corr= [-1.00]		corr= [-0.77]		corr= [-0.10]	

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

$\text{sqrt}(s)_{\text{pole}} = (0.2033 \pm 0.0043477) + (i/2)*(-0.029575 \pm 0.0048465) [0.06]$

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	

```

=====
k_re= -0.0236 +/- 0.0042 | k_re= -0.0361 +/- 0.0049 | k_re= 0.0749 +/- 0.0029 |
k_im= 0.0319 +/- 0.0048 | k_im= 0.0208 +/- 0.0036 | k_im= -0.0100 +/- 0.0017 |
corr= [ 0.52] | corr= [ 0.46] | corr= [ 0.14] |
=====
|g|= 0.0732 +/- 0.0135 | |g|= 0.1353 +/- 0.0089 | |g|= 0.1034 +/- 0.0100 |
arg(g)/pi= 0.1351 +/- 0.0319 | arg(g)/pi= -0.7953 +/- 0.0248 | arg(g)/pi= -0.3660 +/- 0.0272 |
=====
g_re= 0.0667 +/- 0.0131 | g_re= -0.1083 +/- 0.0099 | g_re= 0.0423 +/- 0.0109 |
g_im= 0.0301 +/- 0.0079 | g_im= -0.0811 +/- 0.0097 | g_im= -0.0944 +/- 0.0077 |
corr= [ 0.36] | corr= [-0.18] | corr= [-0.50] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0+| kaon:kaon/1^S\_0-| pi:pi/1^S\_0+|

sqrt(s)\_pole = (0.082516 +/- 0.021108)  
+ (i/2)\*(+5.1525e-19 +/- 1.5405e-16) [-0.01]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= 0.0951 +/- 0.0046 | k_im= -0.0878 +/- 0.0050 | k_im= 0.0554 +/- 0.0079 |
corr= [ 0.02] | corr= [ 0.02] | corr= [ 0.02] |
=====
|g|= 0.0691 +/- 0.0223 | |g|= 0.0198 +/- 0.0053 | |g|= 0.0288 +/- 0.0162 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 |
=====
g_re= 0.0691 +/- 0.0223 | g_re= -0.0198 +/- 0.0053 | g_re= -0.0288 +/- 0.0162 |
g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [ 0.56] | corr= [ 0.18] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0+| kaon:kaon/1^S\_0-| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.08398 +/- 0.013701)  
+ (i/2)\*(-0.079298 +/- 0.02859) [-0.60]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0086 +/- 0.0041 | k_re= 0.0092 +/- 0.0045 | k_re= 0.0139 +/- 0.0067 |
k_im= 0.0972 +/- 0.0023 | k_im= -0.0901 +/- 0.0024 | k_im= -0.0599 +/- 0.0034 |
corr= [ 0.30] | corr= [ 0.29] | corr= [ 0.12] |
=====
|g|= 0.0655 +/- 0.0152 | |g|= 0.0411 +/- 0.0082 | |g|= 0.0654 +/- 0.0172 |
arg(g)/pi= -0.2637 +/- 0.0455 | arg(g)/pi= 0.4614 +/- 0.0801 | arg(g)/pi= -0.6805 +/- 0.1022 |
=====
g_re= 0.0443 +/- 0.0144 | g_re= 0.0050 +/- 0.0104 | g_re= -0.0351 +/- 0.0247 |
g_im= -0.0483 +/- 0.0106 | g_im= 0.0408 +/- 0.0082 | g_im= -0.0552 +/- 0.0112 |
corr= [-0.50] | corr= [ 0.01] | corr= [ 0.12] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0+|

sqrt(s)\_pole = (0.12444 +/- 0.0046238)  
+ (i/2)\*(+2.4689e-16 +/- 7.3684e-14) [-0.00]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= -0.0829 +/- 0.0017 | k_im= 0.0744 +/- 0.0019 | k_im= 0.0300 +/- 0.0048 |
corr= [ 0.00] | corr= [ 0.00] | corr= [ 0.00] |
=====
|g|= 0.0189 +/- 0.0060 | |g|= 0.0975 +/- 0.0057 | |g|= 0.0862 +/- 0.0039 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 |
=====
g_re= 0.0189 +/- 0.0060 | g_re= -0.0975 +/- 0.0057 | g_re= -0.0862 +/- 0.0039 |
g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [ 0.43] | corr= [-0.38] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.20197 +/- 0.0073459)  
+ (i/2)\*(-0.05421 +/- 0.01356) [ 0.15]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0324 +/- 0.0063 | k_re= -0.0413 +/- 0.0065 | k_re= 0.0747 +/- 0.0048 |
k_im= -0.0422 +/- 0.0073 | k_im= 0.0331 +/- 0.0071 | k_im= -0.0183 +/- 0.0046 |
corr= [ 0.08] | corr= [ 0.14] | corr= [ 0.16] |
=====
|g|= 0.0738 +/- 0.0158 | |g|= 0.1730 +/- 0.0124 | |g|= 0.1243 +/- 0.0145 |
arg(g)/pi= 0.0454 +/- 0.0644 | arg(g)/pi= -0.8138 +/- 0.0303 | arg(g)/pi= -0.3456 +/- 0.0315 |
=====
g_re= 0.0731 +/- 0.0168 | g_re= -0.1442 +/- 0.0161 | g_re= 0.0580 +/- 0.0143 |
g_im= 0.0105 +/- 0.0138 | g_im= -0.0956 +/- 0.0129 | g_im= -0.1100 +/- 0.0125 |
corr= [-0.45] | corr= [-0.40] | corr= [-0.30] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0-| pi:pi/1^S\_0-|

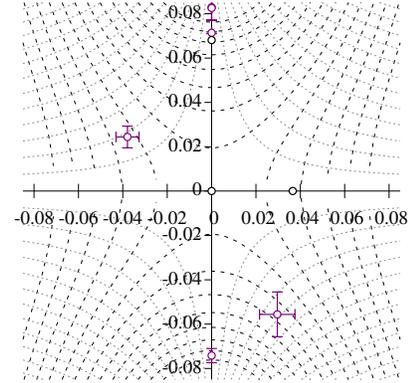
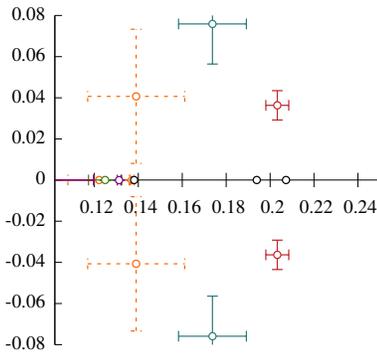
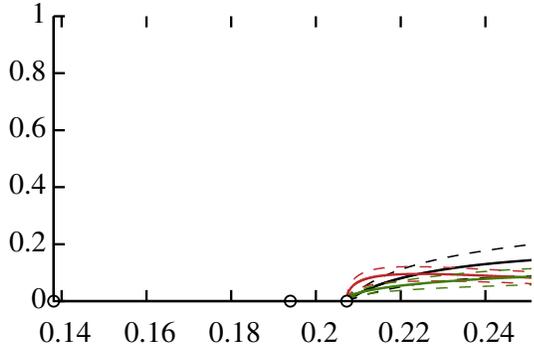
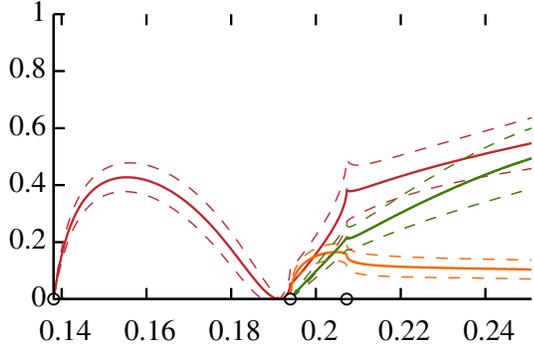
sqrt(s)\_pole = (0.10349 +/- 0.0087698)

+ (i/2)\*(+2.2238e-14 +/- 6.6569e-12) [ 0.04]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= -0.0898 +/- 0.0025	k_im= -0.0820 +/- 0.0028	k_im= -0.0457 +/- 0.0050
corr= [-0.04]	corr= [-0.04]	corr= [-0.04]
g = 0.0246 +/- 0.0053	g = 0.0433 +/- 0.0034	g = 0.0996 +/- 0.0078
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000	arg(g)/pi= 0.5000 +/- 0.0000
g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000
g_im= 0.0246 +/- 0.0053	g_im= -0.0433 +/- 0.0034	g_im= 0.0996 +/- 0.0078
corr= [-1.00]	corr= [-0.43]	corr= [ 0.39]

\*\*\*\*\*

# k\_inv\_poly\_lcclcc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 49.49 / (57 - 8) = 1.01$

JP0+_c_eta:eta/1^S_0 eta:eta/1^S_0_order0	-0.85933 +/- 0.2303	1.00	0.88	-0.27	-0.09	0.16	0.06	0.18	-0.24
JP0+_c_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	-0.53774 +/- 0.15497	1.00	-0.56	0.31	-0.19	-0.29	0.08	0.03	
JP0+_c_eta:eta/1^S_0 pi:pi/1^S_0_order0	0.47608 +/- 0.092484	1.00	-0.57	0.50	0.82	0.01	-0.51		
JP0+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	-1.5170 +/- 0.46447	1.00	-0.97	-0.83	-0.17	0.48			
JP0+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order1	0.71829 +/- 0.33785	1.00	0.78	0.20	-0.47				
JP0+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	-0.16339 +/- 0.13886	1.00	-0.13	-0.44					
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order0	-0.071467 +/- 0.088953	1.00	-0.75						
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order1	0.089283 +/- 0.12146	1.00							

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13126 \pm 0.00084395) + (i/2)*(-2.2446e-14 \pm 5.9616e-12) [-0.04]$

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= -0.0000 +/- 0.0000	k_im= 0.0802 +/- 0.0003	k_re= -0.0000 +/- 0.0000	k_im= 0.0714 +/- 0.0004	k_re= -0.0000 +/- 0.0000	k_im= 0.0215 +/- 0.0013
corr= [ 0.04]		corr= [ 0.04]		corr= [ 0.04]	
g = 0.0380 +/- 0.0152	arg(g)/pi= 0.0000 +/- 0.0000	g = 0.0551 +/- 0.0193	arg(g)/pi= 1.0000 +/- 0.0000	g = 0.0912 +/- 0.0026	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.0380 +/- 0.0152	g_im= 0.0000 +/- 0.0000	g_re= -0.0551 +/- 0.0193	g_im= 0.0000 +/- 0.0000	g_re= -0.0912 +/- 0.0026	g_im= 0.0000 +/- 0.0000
corr= [-1.00]		corr= [-0.94]		corr= [ 0.25]	

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.10059 \pm 0.019146) + (i/2)*(+6.8761e-17 \pm 2.0476e-14) [-0.06]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
---------------	-----------------	-------------

```

=====
k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= 0.0906 +/- 0.0053 | k_im= 0.0829 +/- 0.0058 | k_im= 0.0473 +/- 0.0102 |
corr= [ 0.06] | corr= [ 0.06] | corr= [ 0.06] |
=====
|g|= 0.0544 +/- 0.0243 | |g|= 0.0831 +/- 0.0244 | |g|= 0.0138 +/- 0.0135 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 |
=====
g_re= 0.0544 +/- 0.0243 | g_re= 0.0831 +/- 0.0244 | g_re= -0.0138 +/- 0.0135 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [-0.12] | corr= [-0.66] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0+| kaon:kaon/1^S\_0+| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.20327 +/- 0.0052176)  
+ (i/2)\*(-0.036341 +/- 0.0071189) [ 0.21]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0266 +/- 0.0046 | k_re= -0.0379 +/- 0.0052 | k_re= 0.0750 +/- 0.0035 |
k_im= 0.0347 +/- 0.0058 | k_im= 0.0244 +/- 0.0049 | k_im= -0.0123 +/- 0.0024 |
corr= [ 0.36] | corr= [ 0.41] | corr= [ 0.26] |
=====
|g|= 0.1462 +/- 0.0182 | |g|= 0.1413 +/- 0.0233 | |g|= 0.1213 +/- 0.0151 |
arg(g)/pi= 0.1074 +/- 0.0414 | arg(g)/pi= -0.8289 +/- 0.0607 | arg(g)/pi= -0.3647 +/- 0.0546 |
=====
g_re= 0.1379 +/- 0.0171 | g_re= -0.1214 +/- 0.0230 | g_re= 0.0500 +/- 0.0208 |
g_im= 0.0484 +/- 0.0200 | g_im= -0.0723 +/- 0.0272 | g_im= -0.1105 +/- 0.0152 |
corr= [ 0.12] | corr= [-0.07] | corr= [ 0.15] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0+| kaon:kaon/1^S\_0+| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.10171 +/- 0.017945)  
+ (i/2)\*(+1.4669e-13 +/- 4.3677e-11) [-0.06]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= 0.0903 +/- 0.0051 | k_im= 0.0826 +/- 0.0055 | k_im= -0.0467 +/- 0.0098 |
corr= [ 0.06] | corr= [ 0.06] | corr= [ 0.06] |
=====
|g|= 0.0489 +/- 0.0230 | |g|= 0.0909 +/- 0.0201 | |g|= 0.0087 +/- 0.0092 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 |
=====
g_re= 0.0489 +/- 0.0230 | g_re= 0.0909 +/- 0.0201 | g_re= 0.0087 +/- 0.0092 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [ 0.12] | corr= [-0.80] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0+| kaon:kaon/1^S\_0-| pi:pi/1^S\_0+|

sqrt(s)\_pole = (0.12489 +/- 0.00756)  
+ (i/2)\*(+2.2947e-13 +/- 6.8655e-11) [-0.01]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= 0.0827 +/- 0.0029 | k_im= -0.0742 +/- 0.0032 | k_im= 0.0295 +/- 0.0080 |
corr= [ 0.01] | corr= [ 0.01] | corr= [ 0.01] |
=====
|g|= 0.0767 +/- 0.0101 | |g|= 0.0112 +/- 0.0076 | |g|= 0.0876 +/- 0.0064 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 |
=====
g_re= 0.0767 +/- 0.0101 | g_re= -0.0112 +/- 0.0076 | g_re= -0.0876 +/- 0.0064 |
g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [-0.93] | corr= [-0.98] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0+| kaon:kaon/1^S\_0-| pi:pi/1^S\_0-|

sqrt(s)\_pole = (0.17374 +/- 0.015441)  
+ (i/2)\*(-0.075908 +/- 0.01949) [ 0.18]

```

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0254 +/- 0.0068 | k_re= 0.0296 +/- 0.0080 | k_re= 0.0570 +/- 0.0102 |
k_im= 0.0648 +/- 0.0095 | k_im= -0.0556 +/- 0.0101 | k_im= -0.0289 +/- 0.0075 |
corr= [ 0.35] | corr= [ 0.41] | corr= [ 0.37] |
=====
|g|= 0.1712 +/- 0.0204 | |g|= 0.0585 +/- 0.0070 | |g|= 0.1191 +/- 0.0169 |
arg(g)/pi= -0.0578 +/- 0.0432 | arg(g)/pi= 0.7391 +/- 0.0457 | arg(g)/pi= -0.4992 +/- 0.0315 |
=====
g_re= 0.1684 +/- 0.0222 | g_re= -0.0399 +/- 0.0066 | g_re= 0.0003 +/- 0.0118 |
g_im= -0.0309 +/- 0.0215 | g_im= 0.0427 +/- 0.0087 | g_im= -0.1191 +/- 0.0169 |
corr= [ 0.44] | corr= [ 0.20] | corr= [-0.57] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0-| kaon:kaon/1^S\_0+| pi:pi/1^S\_0+|

sqrt(s)\_pole = (0.12217 +/- 0.014219)

+ (i/2)\*(+2.1753e-15 +/- 6.4251e-13) [-0.06]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0					
k_re= -0.0000 +/- 0.0000	k_im= -0.0837 +/- 0.0052	corr= [ 0.06]	k_re= 0.0000 +/- 0.0000	k_im= 0.0753 +/- 0.0058	corr= [ 0.06]				
g = 0.0174 +/- 0.0133	arg(g)/pi= 0.0000 +/- 0.0000	g_re= 0.0174 +/- 0.0133	g_im= 0.0000 +/- 0.0000	corr= [-1.00]	g = 0.1236 +/- 0.0224	arg(g)/pi= 1.0000 +/- 0.0000	g_re= -0.1236 +/- 0.0224	g_im= 0.0000 +/- 0.0000	corr= [ 0.87]
g = 0.0580 +/- 0.0394	arg(g)/pi= 1.0000 +/- 0.0000	g_re= -0.0580 +/- 0.0394	g_im= 0.0000 +/- 0.0000	corr= [-0.95]					

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.13905 +/- 0.022117)  
+ (i/2)\*(-0.040701 +/- 0.03264) [-0.90]

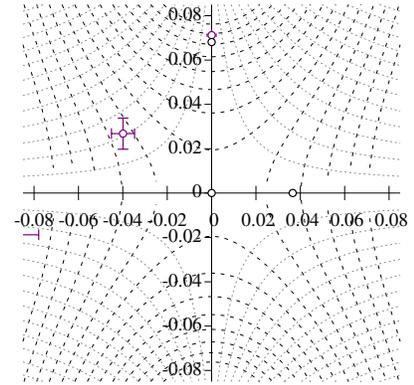
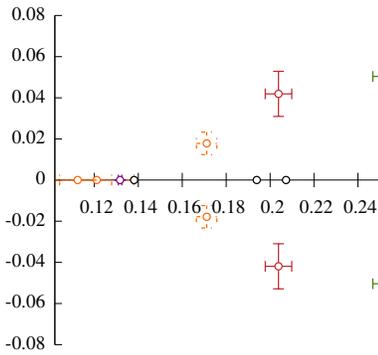
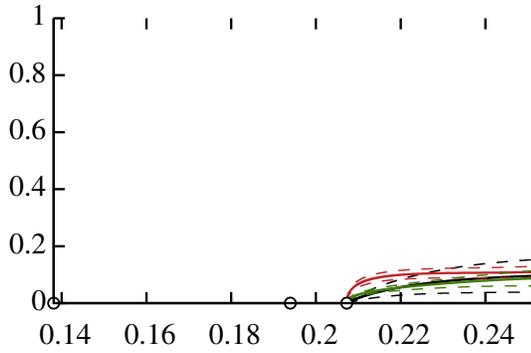
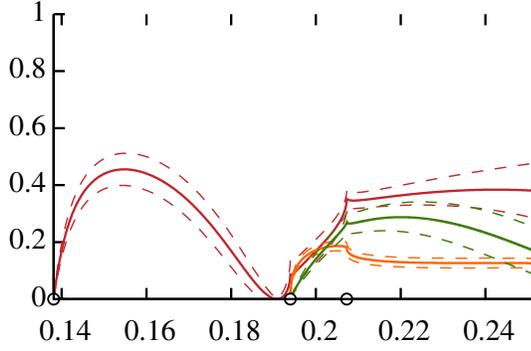
eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0					
k_re= 0.0091 +/- 0.0094	k_im= -0.0781 +/- 0.0079	corr= [ 0.91]	k_re= -0.0102 +/- 0.0108	k_im= 0.0691 +/- 0.0086	corr= [ 0.91]				
g = 0.0531 +/- 0.0116	arg(g)/pi= -0.2611 +/- 0.0417	g_re= 0.0362 +/- 0.0092	g_im= -0.0389 +/- 0.0099	corr= [-0.47]	g = 0.1503 +/- 0.0412	arg(g)/pi= 0.9024 +/- 0.0745	g_re= -0.1433 +/- 0.0490	g_im= 0.0454 +/- 0.0232	corr= [ 0.81]
g = 0.0857 +/- 0.0223	arg(g)/pi= -0.4649 +/- 0.1368	g_re= 0.0094 +/- 0.0342	g_im= -0.0851 +/- 0.0262	corr= [ 0.99]					

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.13699 +/- 0.001094)  
+ (i/2)\*(-3.961e-14 +/- 1.1809e-11) [-0.02]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0					
k_re= 0.0000 +/- 0.0000	k_im= -0.0778 +/- 0.0005	corr= [ 0.02]	k_re= 0.0000 +/- 0.0000	k_im= -0.0687 +/- 0.0005	corr= [ 0.02]				
g = 0.0188 +/- 0.0045	arg(g)/pi= 0.5000 +/- 0.0000	g_re= 0.0000 +/- 0.0000	g_im= 0.0188 +/- 0.0045	corr= [-1.00]	g = 0.0098 +/- 0.0064	arg(g)/pi= -0.5000 +/- 0.0000	g_re= 0.0000 +/- 0.0000	g_im= -0.0098 +/- 0.0064	corr= [-0.72]
g = 0.0677 +/- 0.0150	arg(g)/pi= 0.5000 +/- 0.0000	g_re= -0.0000 +/- 0.0000	g_im= 0.0677 +/- 0.0150	corr= [ 0.58]					

# k\_lcclcc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 48.90 / (57 - 8) = 1.00$

JPO+ <sub>gamma_eta:eta/1^S_0</sub> eta:eta/1^S_0_order0	2.4833 +/- 0.70886	1.00	0.67	-0.61	0.22	-0.23	-0.10	0.07	0.02	
JPO+ <sub>gamma_eta:eta/1^S_0</sub> kaon:kaon/1^S_0_orde	2.6146 +/- 0.37004		1.00	-0.59	0.83	0.07	-0.66	0.31	-0.02	
JPO+ <sub>gamma_eta:eta/1^S_0</sub> pi:pi/1^S_0_order0	-3.2149 +/- 0.45591			1.00	-0.37	0.32	0.47	-0.44	-0.35	
JPO+ <sub>gamma_kaon:kaon/1^S_0</sub> kaon:kaon/1^S_0_or	-0.79204 +/- 0.32572				1.00	0.01	-0.80	0.39	-0.04	
JPO+ <sub>gamma_kaon:kaon/1^S_0</sub> kaon:kaon/1^S_0_or	1.6846 +/- 0.30194					1.00	-0.34	0.19	-0.33	
JPO+ <sub>gamma_kaon:kaon/1^S_0</sub> pi:pi/1^S_0_order0	-3.0891 +/- 0.35715						1.00	-0.73	0.11	
JPO+ <sub>gamma_pi:pi/1^S_0</sub> pi:pi/1^S_0_order0	2.0352 +/- 0.52595							1.00	-0.49	
JPO+ <sub>gamma_pi:pi/1^S_0</sub> pi:pi/1^S_0_order1	0.24406 +/- 0.39933								1.00	
JPO+ <sub>gamma_eta:eta/1^S_0</sub> eta:eta/1^S_0_order1	0.0000 +/- 0									FIXED
JPO+ <sub>gamma_eta:eta/1^S_0</sub> kaon:kaon/1^S_0_orde	0.0000 +/- 0									FIXED
JPO+ <sub>gamma_eta:eta/1^S_0</sub> pi:pi/1^S_0_order1	0.0000 +/- 0									FIXED
JPO+ <sub>gamma_kaon:kaon/1^S_0</sub> pi:pi/1^S_0_order1	0.0000 +/- 0									FIXED

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13171 \pm 0.00078231) + (i/2) * (+2.9462e-13 \pm 7.8504e-11) [-0.08]$

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0000 +/- 0.0000	k_im= 0.0800 +/- 0.0003	k_re= 0.0000 +/- 0.0000	k_im= 0.0712 +/- 0.0004	k_re= 0.0000 +/- 0.0000	k_im= 0.0208 +/- 0.0012
corr= [ 0.08]		corr= [ 0.08]		corr= [ 0.08]	
g = 0.0519 +/- 0.0096	arg(g)/pi= 0.0000 +/- 0.0000	g = 0.1458 +/- 0.0112	arg(g)/pi= 1.0000 +/- 0.0000	g = 0.0922 +/- 0.0043	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.0519 +/- 0.0096	g_im= 0.0000 +/- 0.0000	g_re= -0.1458 +/- 0.0112	g_im= 0.0000 +/- 0.0000	g_re= -0.0922 +/- 0.0043	g_im= 0.0000 +/- 0.0000
corr= [-1.00]		corr= [ 0.11]		corr= [-0.67]	

\*\*\*\*\*

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

```

sqrt(s)_pole = (0.20383 +/- 0.0060096)
               + (i/2)*(-0.041908 +/- 0.010943) [ 0.41]

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= -0.0293 +/- 0.0048 | k_re= -0.0399 +/- 0.0052 | k_re= 0.0755 +/- 0.0039 |
k_im= 0.0364 +/- 0.0075 | k_im= 0.0268 +/- 0.0070 | k_im= -0.0141 +/- 0.0038 |
corr= [ 0.10] | corr= [ 0.32] | corr= [ 0.42] |
-----|-----|-----|
|g|= 0.1713 +/- 0.0202 | |g|= 0.1761 +/- 0.0264 | |g|= 0.1435 +/- 0.0248 |
arg(g)/pi= 0.0326 +/- 0.0765 | arg(g)/pi= 0.2286 +/- 0.0639 | arg(g)/pi= 0.6096 +/- 0.0800 |
-----|-----|-----|
g_re= 0.1704 +/- 0.0209 | g_re= 0.1326 +/- 0.0296 | g_re= -0.0484 +/- 0.0352 |
g_im= 0.0175 +/- 0.0408 | g_im= 0.1159 +/- 0.0327 | g_im= 0.1351 +/- 0.0259 |
corr= [-0.25] | corr= [-0.28] | corr= [ 0.21] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

```

sqrt(s)_pole = (0.25909 +/- 0.012313)
               + (i/2)*(-0.050389 +/- 0.017542) [-0.16]

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= -0.0794 +/- 0.0099 | k_re= 0.0870 +/- 0.0091 | k_re= -0.1099 +/- 0.0073 |
k_im= 0.0206 +/- 0.0068 | k_im= -0.0188 +/- 0.0063 | k_im= 0.0149 +/- 0.0051 |
corr= [-0.05] | corr= [-0.08] | corr= [-0.13] |
-----|-----|-----|
|g|= 0.0867 +/- 0.0197 | |g|= 0.1642 +/- 0.0078 | |g|= 0.0868 +/- 0.0172 |
arg(g)/pi= -0.4707 +/- 0.0837 | arg(g)/pi= -0.5824 +/- 0.0199 | arg(g)/pi= 0.9504 +/- 0.0619 |
-----|-----|-----|
g_re= 0.0080 +/- 0.0214 | g_re= -0.0420 +/- 0.0114 | g_re= -0.0858 +/- 0.0189 |
g_im= -0.0863 +/- 0.0211 | g_im= -0.1587 +/- 0.0059 | g_im= 0.0135 +/- 0.0149 |
corr= [ 0.72] | corr= [ 0.58] | corr= [ 0.69] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

```

sqrt(s)_pole = (0.11238 +/- 0.015472)
               + (i/2)*(+2.7737e-13 +/- 3.5275e-11) [-0.05]

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= -0.0871 +/- 0.0050 | k_im= 0.0790 +/- 0.0055 | k_im= 0.0401 +/- 0.0108 |
corr= [ 0.05] | corr= [ 0.05] | corr= [ 0.05] |
-----|-----|-----|
|g|= 0.0277 +/- 0.0165 | |g|= 0.0828 +/- 0.0261 | |g|= 0.1919 +/- 0.0636 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 |
-----|-----|-----|
g_re= 0.0277 +/- 0.0165 | g_re= -0.0828 +/- 0.0261 | g_re= -0.1919 +/- 0.0636 |
g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [-0.87] | corr= [ 0.96] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

```

sqrt(s)_pole = (0.17114 +/- 0.0046381)
               + (i/2)*(-0.017839 +/- 0.0054471) [-0.59]

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= 0.0065 +/- 0.0023 | k_re= -0.0082 +/- 0.0031 | k_re= 0.0509 +/- 0.0040 |
k_im= -0.0590 +/- 0.0031 | k_im= 0.0466 +/- 0.0038 | k_im= -0.0075 +/- 0.0021 |
corr= [ 0.67] | corr= [ 0.69] | corr= [-0.51] |
-----|-----|-----|
|g|= 0.0535 +/- 0.0095 | |g|= 0.2089 +/- 0.0105 | |g|= 0.0631 +/- 0.0086 |
arg(g)/pi= -0.1838 +/- 0.0276 | arg(g)/pi= -0.0012 +/- 0.0139 | arg(g)/pi= 0.5119 +/- 0.0214 |
-----|-----|-----|
g_re= 0.0448 +/- 0.0096 | g_re= 0.2089 +/- 0.0105 | g_re= -0.0024 +/- 0.0040 |
g_im= -0.0292 +/- 0.0045 | g_im= -0.0008 +/- 0.0092 | g_im= 0.0630 +/- 0.0087 |
corr= [-0.51] | corr= [-0.72] | corr= [ 0.78] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

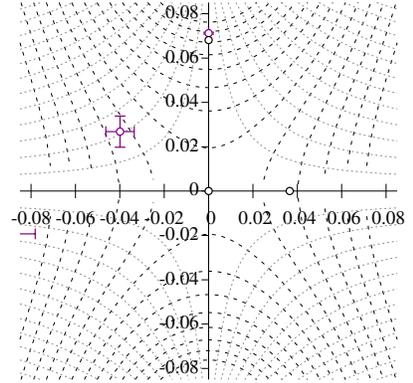
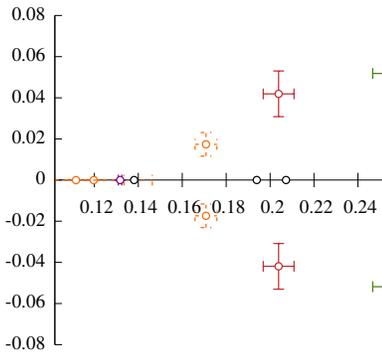
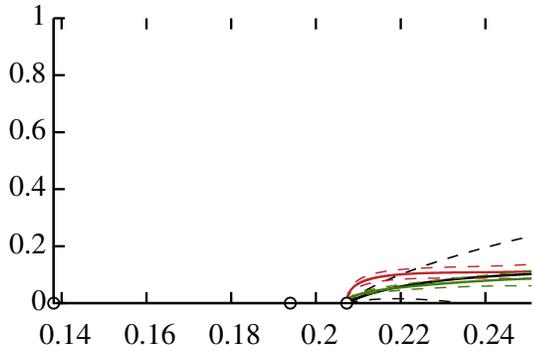
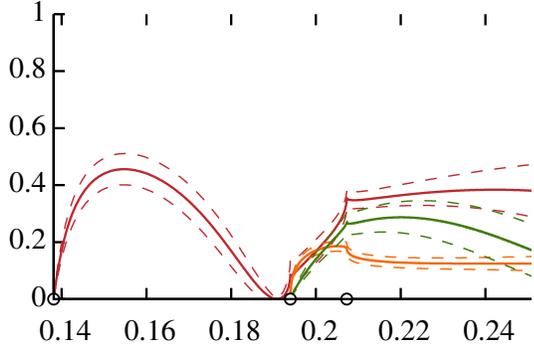
```

sqrt(s)_pole = (0.12107 +/- 0.016873)
               + (i/2)*(+1.769e-14 +/- 5.0552e-12) [-0.02]

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= -0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= -0.0841 +/- 0.0061 | k_im= -0.0758 +/- 0.0067 | k_im= 0.0332 +/- 0.0153 |
corr= [ 0.01] | corr= [ 0.01] | corr= [ 0.01] |
-----|-----|-----|
|g|= 0.0392 +/- 0.0175 | |g|= 0.0093 +/- 0.0037 | |g|= 0.1879 +/- 0.0796 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 |
-----|-----|-----|
g_re= 0.0392 +/- 0.0175 | g_re= 0.0093 +/- 0.0037 | g_re= -0.1879 +/- 0.0796 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [-0.80] | corr= [ 0.93] |
*****

```

# k\_lcclcl



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 48.90 / (57 - 9) = 1.02$

JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order0	2.6064 +/- 1.1457	1.00	-0.78	0.49	-0.42	-0.22	0.21	0.06	-0.15	0.18
JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order1	-0.047216 +/- 0.87011	1.00	-0.11	0.07	0.41	-0.43	-0.13	0.23	-0.22	
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	2.6536 +/- 0.35688	1.00	-0.57	0.68	0.10	-0.61	0.24	0.00		
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order0	-3.2723 +/- 0.44931	1.00	-0.27	0.28	0.43	-0.40	-0.36			
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	-0.78010 +/- 0.34229	1.00	-0.18	-0.76	0.41	-0.12				
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order1	1.6796 +/- 0.33522	1.00	-0.25	0.06	-0.20					
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	-3.1063 +/- 0.34548	1.00	-0.25	0.06	-0.20					
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order0	2.0517 +/- 0.52859	1.00	-0.51							
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order1	0.26165 +/- 0.40833	1.00								
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	0.0000 +/- 0	FIXED								
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order1	0.0000 +/- 0	FIXED								
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order1	0.0000 +/- 0	FIXED								

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13172 \pm 0.00079127) + (i/2) * (+1.9671e-13 \pm 6.8917e-12)$  [ 0.36]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0000 +/- 0.0000	k_im= 0.0800 +/- 0.0003	k_re= 0.0000 +/- 0.0000	k_im= 0.0712 +/- 0.0004	k_re= 0.0000 +/- 0.0000	k_im= 0.0208 +/- 0.0013
corr= [-0.36]		corr= [-0.36]		corr= [-0.36]	
g = 0.0514 +/- 0.0130	arg(g)/pi= 0.0000 +/- 0.0000	g = 0.1459 +/- 0.0124	arg(g)/pi= 1.0000 +/- 0.0000	g = 0.0923 +/- 0.0049	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.0514 +/- 0.0130	g_im= 0.0000 +/- 0.0000	g_re= -0.1459 +/- 0.0124	g_im= 0.0000 +/- 0.0000	g_re= -0.0923 +/- 0.0049	g_im= 0.0000 +/- 0.0000
corr= [-1.00]		corr= [ 0.40]		corr= [-0.72]	

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

```

sqrt(s)_pole = (0.20391 +/- 0.0070146)
               + (i/2)*(-0.041925 +/- 0.011097) [ 0.27]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0294 +/- 0.0060 | k_re= -0.0399 +/- 0.0064 | k_re= 0.0756 +/- 0.0046 |
k_im= 0.0363 +/- 0.0078 | k_im= 0.0268 +/- 0.0070 | k_im= -0.0141 +/- 0.0038 |
corr= [ 0.24] | corr= [ 0.34] | corr= [ 0.30] |
=====
|g|= 0.1730 +/- 0.0339 | |g|= 0.1751 +/- 0.0314 | |g|= 0.1436 +/- 0.0298 |
arg(g)/pi= 0.0332 +/- 0.0869 | arg(g)/pi= 0.2301 +/- 0.0751 | arg(g)/pi= 0.6107 +/- 0.0901 |
=====
g_re= 0.1720 +/- 0.0326 | g_re= 0.1313 +/- 0.0370 | g_re= -0.0490 +/- 0.0413 |
g_im= 0.0180 +/- 0.0481 | g_im= 0.1158 +/- 0.0363 | g_im= 0.1350 +/- 0.0290 |
corr= [ 0.22] | corr= [-0.27] | corr= [ 0.07] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

```

sqrt(s)_pole = (0.25913 +/- 0.012387)
               + (i/2)*(-0.051824 +/- 0.020665) [ 0.07]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0795 +/- 0.0097 | k_re= 0.0871 +/- 0.0090 | k_re= -0.1099 +/- 0.0072 |
k_im= 0.0211 +/- 0.0083 | k_im= -0.0193 +/- 0.0076 | k_im= 0.0153 +/- 0.0061 |
corr= [ 0.12] | corr= [ 0.11] | corr= [ 0.08] |
=====
|g|= 0.0868 +/- 0.0234 | |g|= 0.1639 +/- 0.0085 | |g|= 0.0848 +/- 0.0301 |
arg(g)/pi= -0.4629 +/- 0.1478 | arg(g)/pi= -0.5829 +/- 0.0185 | arg(g)/pi= 0.9484 +/- 0.0670 |
=====
g_re= 0.0101 +/- 0.0406 | g_re= -0.0422 +/- 0.0105 | g_re= -0.0837 +/- 0.0317 |
g_im= -0.0863 +/- 0.0229 | g_im= -0.1583 +/- 0.0073 | g_im= 0.0137 +/- 0.0147 |
corr= [-0.03] | corr= [ 0.40] | corr= [ 0.55] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

```

sqrt(s)_pole = (0.11161 +/- 0.021887)
               + (i/2)*(-5.2411e-12 +/- 1.538e-09) [-0.06]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= -0.0873 +/- 0.0070 | k_im= 0.0793 +/- 0.0077 | k_im= 0.0407 +/- 0.0149 |
corr= [ 0.06] | corr= [ 0.06] | corr= [ 0.06] |
=====
|g|= 0.0289 +/- 0.0281 | |g|= 0.0798 +/- 0.0466 | |g|= 0.1964 +/- 0.1068 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 |
=====
g_re= 0.0289 +/- 0.0281 | g_re= -0.0798 +/- 0.0466 | g_re= -0.1964 +/- 0.1068 |
g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [-0.95] | corr= [ 0.97] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

```

sqrt(s)_pole = (0.17081 +/- 0.0049893)
               + (i/2)*(-0.017359 +/- 0.0057429) [-0.67]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0063 +/- 0.0024 | k_re= -0.0079 +/- 0.0033 | k_re= 0.0506 +/- 0.0043 |
k_im= -0.0592 +/- 0.0033 | k_im= 0.0468 +/- 0.0040 | k_im= -0.0073 +/- 0.0022 |
corr= [ 0.74] | corr= [ 0.75] | corr= [-0.59] |
=====
|g|= 0.0537 +/- 0.0105 | |g|= 0.2099 +/- 0.0126 | |g|= 0.0623 +/- 0.0092 |
arg(g)/pi= -0.1813 +/- 0.0295 | arg(g)/pi= -0.0025 +/- 0.0187 | arg(g)/pi= 0.5135 +/- 0.0231 |
=====
g_re= 0.0452 +/- 0.0105 | g_re= 0.2099 +/- 0.0126 | g_re= -0.0026 +/- 0.0043 |
g_im= -0.0289 +/- 0.0049 | g_im= -0.0016 +/- 0.0124 | g_im= 0.0623 +/- 0.0093 |
corr= [-0.53] | corr= [-0.84] | corr= [ 0.63] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

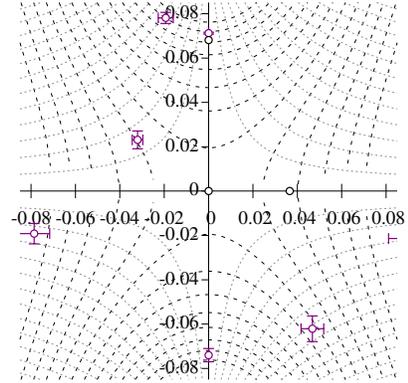
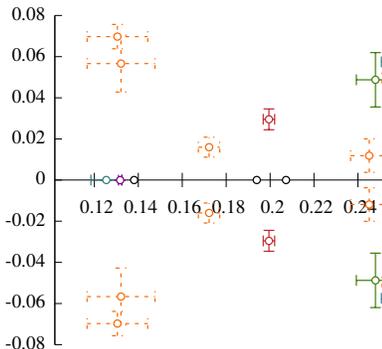
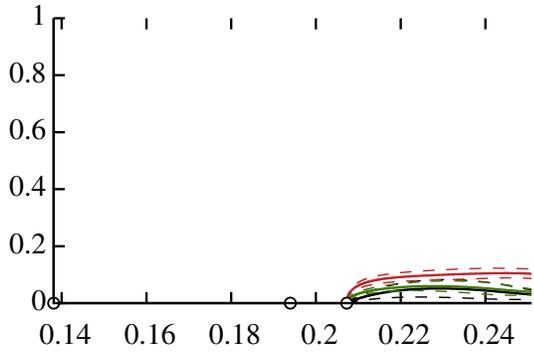
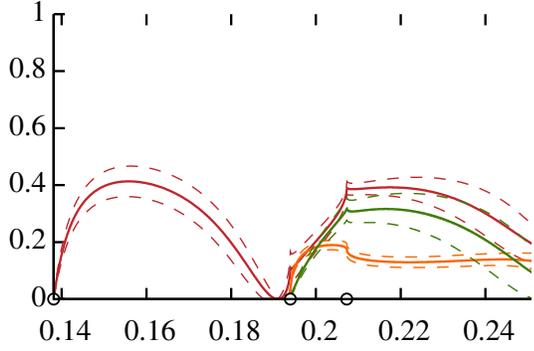
```

sqrt(s)_pole = (0.11975 +/- 0.026638)
               + (i/2)*(-1.2414e-14 +/- 6.1932e-12) [ 0.01]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= -0.0846 +/- 0.0094 | k_im= -0.0763 +/- 0.0104 | k_im= 0.0344 +/- 0.0230 |
corr= [-0.01] | corr= [-0.01] | corr= [-0.01] |
=====
|g|= 0.0403 +/- 0.0289 | |g|= 0.0088 +/- 0.0060 | |g|= 0.1944 +/- 0.1368 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 |
=====
g_re= 0.0403 +/- 0.0289 | g_re= 0.0088 +/- 0.0060 | g_re= -0.1944 +/- 0.1368 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [-0.92] | corr= [ 0.96] |
=====

```

# k\_qcclcc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 47.45 / (57 - 9) = 0.99$

JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order0	2.7706 +/- 0.60523	1.00	0.52	-0.59	0.01	-0.31	0.09	-0.00	0.03	0.02
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	2.8630 +/- 0.31619	1.00	-0.39	0.80	0.16	-0.62	0.18	0.07	-0.12	
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order0	-3.5560 +/- 0.43676		1.00	-0.11	0.37	0.28	-0.36	-0.19	-0.08	
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	-0.62261 +/- 0.32071			1.00	0.12	-0.77	0.25	0.07	-0.17	
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order1	1.7956 +/- 0.33073				1.00	-0.43	0.13	-0.06	-0.15	
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	-3.5452 +/- 0.3603					1.00	-0.60	-0.08	0.21	
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order0	5.4068 +/- 0.56911						1.00	-0.51	0.24	
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order1	-5.3248 +/- 0.71239							1.00	-0.78	
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order2	2.5887 +/- 0.40471								1.00	
JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order1	0.0000 +/- 0									FIXED
JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order2	0.0000 +/- 0									FIXED
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_order1	0.0000 +/- 0									FIXED
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_order2	0.0000 +/- 0									FIXED
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order1	0.0000 +/- 0									FIXED
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order2	0.0000 +/- 0									FIXED
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order1	0.0000 +/- 0									FIXED
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order1	0.0000 +/- 0									FIXED
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order2	0.0000 +/- 0									FIXED

## pole singularities

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13174 \pm 0.00078917) + (i/2)*(-1.9272e-13 \pm 1.2397e-11) [-1.00]$

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
$k_{\text{re}} = -0.0000 \pm 0.0000$					
$k_{\text{im}} = 0.0800 \pm 0.0003$	$k_{\text{im}} = 0.0712 \pm 0.0004$	$k_{\text{im}} = 0.0208 \pm 0.0013$			
corr= [ 1.00]					
$ g  = 0.0588 \pm 0.0088$	$ g  = 0.1539 \pm 0.0111$	$ g  = 0.0894 \pm 0.0043$			
$\text{arg}(g)/\pi = 0.0000 \pm 0.0000$	$\text{arg}(g)/\pi = 1.0000 \pm 0.0000$				
$g_{\text{re}} = 0.0588 \pm 0.0088$	$g_{\text{re}} = -0.1539 \pm 0.0111$	$g_{\text{re}} = -0.0894 \pm 0.0043$			
$g_{\text{im}} = 0.0000 \pm 0.0000$					
corr= [-1.00]	corr= [-0.11]	corr= [-0.58]	corr= [-0.58]	corr= [-0.58]	corr= [-0.58]

\*\*\*\*\*

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.12983 +/- 0.007648)  
+ (i/2)\*(-0.092943 +/- 0.012442) [-0.44]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0176 +/- 0.0031	k_re= -0.0193 +/- 0.0034	k_re= 0.0325 +/- 0.0051
k_im= 0.0859 +/- 0.0023	k_im= 0.0781 +/- 0.0025	k_im= -0.0464 +/- 0.0031
corr= [ 0.40]	corr= [ 0.37]	corr= [ 0.06]
g = 0.1331 +/- 0.0161	g = 0.1647 +/- 0.0113	g = 0.0589 +/- 0.0057
arg(g)/pi= 0.2194 +/- 0.0206	arg(g)/pi= 0.9379 +/- 0.0329	arg(g)/pi= -0.8554 +/- 0.0306
g_re= 0.1027 +/- 0.0120	g_re= -0.1616 +/- 0.0105	g_re= -0.0529 +/- 0.0057
g_im= 0.0847 +/- 0.0138	g_im= 0.0319 +/- 0.0176	g_im= -0.0258 +/- 0.0057
corr= [ 0.60]	corr= [-0.15]	corr= [ 0.01]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.19949 +/- 0.0026266)  
+ (i/2)\*(-0.029535 +/- 0.0050716) [ 0.56]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0206 +/- 0.0021	k_re= -0.0320 +/- 0.0024	k_re= 0.0723 +/- 0.0017
k_im= 0.0357 +/- 0.0039	k_im= 0.0231 +/- 0.0040	k_im= -0.0102 +/- 0.0018
corr= [-0.20]	corr= [ 0.32]	corr= [ 0.56]
g = 0.1242 +/- 0.0105	g = 0.1473 +/- 0.0140	g = 0.1014 +/- 0.0065
arg(g)/pi= 0.0352 +/- 0.0334	arg(g)/pi= 0.2198 +/- 0.0270	arg(g)/pi= 0.5987 +/- 0.0324
g_re= 0.1234 +/- 0.0099	g_re= 0.1136 +/- 0.0118	g_re= -0.0309 +/- 0.0104
g_im= 0.0137 +/- 0.0135	g_im= 0.0938 +/- 0.0146	g_im= 0.0966 +/- 0.0064
corr= [ 0.41]	corr= [ 0.16]	corr= [ 0.13]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.24796 +/- 0.0086701)  
+ (i/2)\*(-0.048729 +/- 0.013232) [-0.55]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0703 +/- 0.0079	k_re= 0.0786 +/- 0.0070	k_re= -0.1033 +/- 0.0053
k_im= 0.0215 +/- 0.0049	k_im= -0.0192 +/- 0.0046	k_im= 0.0146 +/- 0.0038
corr= [-0.43]	corr= [-0.47]	corr= [-0.53]
g = 0.0841 +/- 0.0092	g = 0.1484 +/- 0.0064	g = 0.0565 +/- 0.0144
arg(g)/pi= -0.3826 +/- 0.1028	arg(g)/pi= -0.5901 +/- 0.0204	arg(g)/pi= 0.9135 +/- 0.0324
g_re= 0.0303 +/- 0.0281	g_re= -0.0414 +/- 0.0095	g_re= -0.0544 +/- 0.0137
g_im= -0.0784 +/- 0.0057	g_im= -0.1425 +/- 0.0063	g_im= 0.0151 +/- 0.0073
corr= [ 0.43]	corr= [-0.10]	corr= [-0.59]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.12541 +/- 0.0070143)  
+ (i/2)\*(+3.1819e-17 +/- 7.1552e-13) [-0.04]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000
k_im= 0.0825 +/- 0.0027	k_im= -0.0740 +/- 0.0030	k_im= -0.0289 +/- 0.0076
corr= [ 0.04]	corr= [ 0.04]	corr= [ 0.05]
g = 0.1037 +/- 0.0306	g = 0.0163 +/- 0.0013	g = 0.0835 +/- 0.0043
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000
g_re= 0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000
g_im= 0.1037 +/- 0.0306	g_im= 0.0163 +/- 0.0013	g_im= -0.0835 +/- 0.0043
corr= [-1.00]	corr= [-0.15]	corr= [-0.76]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.18661 +/- 0.0067307)  
+ (i/2)\*(-0.12467 +/- 0.020559) [-0.02]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0421 +/- 0.0052	k_re= 0.0468 +/- 0.0051	k_re= 0.0689 +/- 0.0043
k_im= 0.0691 +/- 0.0054	k_im= -0.0621 +/- 0.0058	k_im= -0.0422 +/- 0.0061
corr= [-0.40]	corr= [-0.38]	corr= [-0.21]
g = 0.1847 +/- 0.0244	g = 0.0670 +/- 0.0069	g = 0.0657 +/- 0.0088
arg(g)/pi= 0.0754 +/- 0.0145	arg(g)/pi= -0.3569 +/- 0.0532	arg(g)/pi= 0.6762 +/- 0.0492

```

g_re= 0.1796 +/- 0.0226 | g_re= 0.0291 +/- 0.0113 | g_re= -0.0346 +/- 0.0055 |
g_im= 0.0434 +/- 0.0125 | g_im= -0.0604 +/- 0.0067 | g_im= 0.0559 +/- 0.0123 |
corr= [ 0.82] | corr= [ 0.22] | corr= [ 0.65] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0+| kaon:kaon/1^S_0-| pi:pi/1^S_0-|

```

```

sqrt(s)_pole = (0.25773 +/- 0.0070572)
+ (i/2)*(-0.057453 +/- 0.0074957) [-0.12]

```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= -0.0788 +/- 0.0056 | k_re= 0.0863 +/- 0.0052 | k_re= 0.1092 +/- 0.0042 |
k_im= 0.0235 +/- 0.0030 | k_im= -0.0214 +/- 0.0027 | k_im= -0.0170 +/- 0.0022 |
corr= [ 0.12] | corr= [ 0.06] | corr= [-0.06] |
-----|-----|-----|
|g|= 0.0137 +/- 0.7028 | |g|= 0.0356 +/- 1.8712 | |g|= 0.0167 +/- 0.9258 |
arg(g)/pi= -0.4669 +/- 1.6864 | arg(g)/pi= -0.5992 +/- 0.0977 | arg(g)/pi= -0.5659 +/- 0.0732 |
-----|-----|-----|
g_re= 0.0014 +/- 0.0190 | g_re= -0.0109 +/- 0.5819 | g_re= -0.0034 +/- 0.1915 |
g_im= -0.0136 +/- 0.7062 | g_im= -0.0338 +/- 1.7785 | g_im= -0.0164 +/- 0.9057 |
corr= [-0.16] | corr= [ 1.00] | corr= [ 1.00] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0-| kaon:kaon/1^S_0+| pi:pi/1^S_0+|

```

```

sqrt(s)_pole = (0.13048 +/- 0.013821)
+ (i/2)*(-0.069735 +/- 0.0059076) [-0.32]

```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= 0.0136 +/- 0.0028 | k_re= -0.0151 +/- 0.0032 | k_re= -0.0283 +/- 0.0078 |
k_im= -0.0835 +/- 0.0049 | k_im= 0.0754 +/- 0.0053 | k_im= 0.0402 +/- 0.0058 |
corr= [ 0.89] | corr= [ 0.90] | corr= [ 0.91] |
-----|-----|-----|
|g|= 0.0401 +/- 0.0093 | |g|= 0.0762 +/- 0.0218 | |g|= 0.1389 +/- 0.0157 |
arg(g)/pi= 0.3178 +/- 0.0453 | arg(g)/pi= -0.9080 +/- 0.1015 | arg(g)/pi= -0.7703 +/- 0.0100 |
-----|-----|-----|
g_re= 0.0217 +/- 0.0026 | g_re= -0.0730 +/- 0.0142 | g_re= -0.1043 +/- 0.0127 |
g_im= 0.0337 +/- 0.0106 | g_im= -0.0217 +/- 0.0294 | g_im= -0.0918 +/- 0.0103 |
corr= [ 0.20] | corr= [ 0.97] | corr= [ 0.86] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0-| kaon:kaon/1^S_0+| pi:pi/1^S_0+|

```

```

sqrt(s)_pole = (0.24147 +/- 0.012921)
+ (i/2)*(-0.10573 +/- 0.01586) [-0.34]

```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= 0.0716 +/- 0.0097 | k_re= -0.0783 +/- 0.0093 | k_re= -0.1006 +/- 0.0077 |
k_im= -0.0446 +/- 0.0053 | k_im= 0.0407 +/- 0.0051 | k_im= 0.0317 +/- 0.0044 |
corr= [ 0.06] | corr= [-0.04] | corr= [-0.25] |
-----|-----|-----|
|g|= 0.1546 +/- 0.0091 | |g|= 0.1028 +/- 0.0089 | |g|= 0.0710 +/- 0.0116 |
arg(g)/pi= 0.4609 +/- 0.0409 | arg(g)/pi= 0.7123 +/- 0.0468 | arg(g)/pi= -0.0469 +/- 0.0363 |
-----|-----|-----|
g_re= 0.0189 +/- 0.0206 | g_re= -0.0636 +/- 0.0155 | g_re= 0.0702 +/- 0.0118 |
g_im= 0.1534 +/- 0.0072 | g_im= 0.0808 +/- 0.0082 | g_im= -0.0104 +/- 0.0079 |
corr= [ 0.71] | corr= [ 0.44] | corr= [ 0.04] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0-| kaon:kaon/1^S_0+| pi:pi/1^S_0-|

```

```

sqrt(s)_pole = (0.25594 +/- 0.010139)
+ (i/2)*(-0.10466 +/- 0.012764) [-0.34]

```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= 0.0815 +/- 0.0075 | k_re= -0.0880 +/- 0.0071 | k_re= 0.1089 +/- 0.0059 |
k_im= -0.0411 +/- 0.0042 | k_im= 0.0381 +/- 0.0040 | k_im= -0.0307 +/- 0.0035 |
corr= [-0.06] | corr= [-0.13] | corr= [-0.27] |
-----|-----|-----|
|g|= 0.1357 +/- 0.0117 | |g|= 0.0809 +/- 0.0105 | |g|= 0.0604 +/- 0.0098 |
arg(g)/pi= 0.4059 +/- 0.0255 | arg(g)/pi= 0.6157 +/- 0.0894 | arg(g)/pi= 0.5061 +/- 0.0299 |
-----|-----|-----|
g_re= 0.0395 +/- 0.0131 | g_re= -0.0288 +/- 0.0228 | g_re= -0.0012 +/- 0.0057 |
g_im= 0.1298 +/- 0.0092 | g_im= 0.0756 +/- 0.0103 | g_im= 0.0603 +/- 0.0097 |
corr= [ 0.67] | corr= [ 0.31] | corr= [-0.32] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0-| kaon:kaon/1^S_0+| pi:pi/1^S_0-|

```

```

sqrt(s)_pole = (0.17222 +/- 0.0048561)
+ (i/2)*(-0.016004 +/- 0.0048476) [-0.58]

```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= 0.0059 +/- 0.0021 | k_re= -0.0076 +/- 0.0029 | k_re= 0.0517 +/- 0.0041 |
k_im= -0.0581 +/- 0.0034 | k_im= 0.0454 +/- 0.0042 | k_im= -0.0067 +/- 0.0018 |
corr= [ 0.69] | corr= [ 0.72] | corr= [-0.49] |
-----|-----|-----|

```

g = 0.0562 +/- 0.0094	g = 0.2120 +/- 0.0096	g = 0.0593 +/- 0.0080
arg(g)/pi= -0.1709 +/- 0.0217	arg(g)/pi= 0.0050 +/- 0.0156	arg(g)/pi= 0.5227 +/- 0.0185
g_re= 0.0483 +/- 0.0091	g_re= 0.2120 +/- 0.0097	g_re= -0.0042 +/- 0.0030
g_im= -0.0288 +/- 0.0043	g_im= 0.0033 +/- 0.0103	g_im= 0.0591 +/- 0.0082
corr= [-0.60]	corr= [-0.71]	corr= [ 0.75]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.24513 +/- 0.0084416)  
 + (i/2)\*(-0.011868 +/- 0.0081487) [ 0.46]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0656 +/- 0.0077	k_re= 0.0750 +/- 0.0068	k_re= -0.1013 +/- 0.0051
k_im= -0.0055 +/- 0.0040	k_im= -0.0048 +/- 0.0035	k_im= 0.0036 +/- 0.0025
corr= [ 0.53]	corr= [ 0.51]	corr= [ 0.47]
g = 0.0874 +/- 0.0098	g = 0.1026 +/- 0.0073	g = 0.0997 +/- 0.0082
arg(g)/pi= 0.4541 +/- 0.0847	arg(g)/pi= 0.3328 +/- 0.0493	arg(g)/pi= -0.2199 +/- 0.0237
g_re= 0.0126 +/- 0.0223	g_re= 0.0514 +/- 0.0141	g_re= 0.0768 +/- 0.0058
g_im= 0.0865 +/- 0.0117	g_im= 0.0887 +/- 0.0104	g_im= -0.0635 +/- 0.0094
corr= [-0.67]	corr= [-0.61]	corr= [-0.20]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.13214 +/- 0.01546)  
 + (i/2)\*(-0.056617 +/- 0.013843) [-0.94]

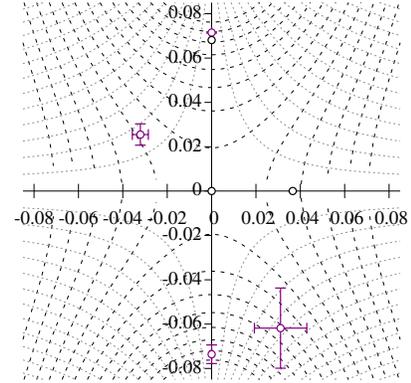
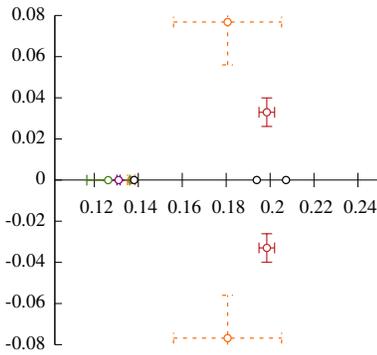
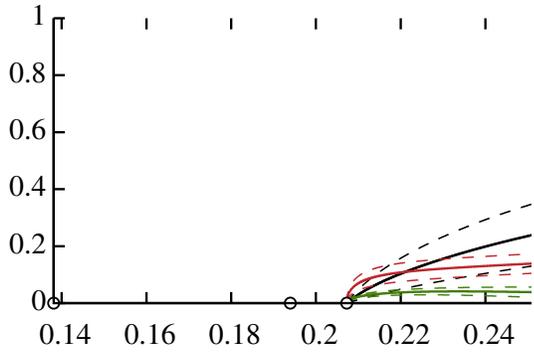
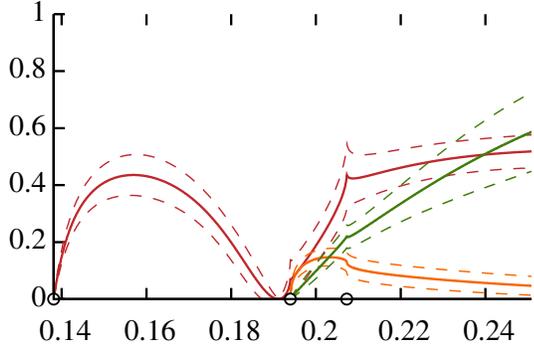
eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0114 +/- 0.0047	k_re= 0.0127 +/- 0.0054	k_re= -0.0261 +/- 0.0121
k_im= -0.0819 +/- 0.0050	k_im= -0.0735 +/- 0.0054	k_im= 0.0359 +/- 0.0044
corr= [ 0.97]	corr= [ 0.97]	corr= [ 0.92]
g = 0.0483 +/- 0.0053	g = 0.0104 +/- 0.0035	g = 0.1523 +/- 0.0234
arg(g)/pi= 0.2642 +/- 0.0308	arg(g)/pi= 0.1288 +/- 0.0806	arg(g)/pi= -0.7503 +/- 0.0035
g_re= 0.0326 +/- 0.0021	g_re= 0.0096 +/- 0.0024	g_re= -0.1078 +/- 0.0167
g_im= 0.0357 +/- 0.0068	g_im= 0.0041 +/- 0.0037	g_im= -0.1076 +/- 0.0165
corr= [ 0.10]	corr= [ 0.83]	corr= [ 0.99]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.25843 +/- 0.007402)  
 + (i/2)\*(-0.0495 +/- 0.0028793) [ 0.28]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0788 +/- 0.0058	k_re= 0.0865 +/- 0.0054	k_re= 0.1095 +/- 0.0043
k_im= -0.0203 +/- 0.0016	k_im= -0.0185 +/- 0.0014	k_im= -0.0146 +/- 0.0009
corr= [ 0.73]	corr= [ 0.66]	corr= [ 0.44]
g = 0.0376 +/- 0.0090	g = 0.0821 +/- 0.0037	g = 0.0697 +/- 0.0038
arg(g)/pi= 0.4688 +/- 0.1759	arg(g)/pi= 0.4305 +/- 0.0581	arg(g)/pi= 0.3875 +/- 0.0207
g_re= 0.0037 +/- 0.0203	g_re= 0.0178 +/- 0.0144	g_re= 0.0241 +/- 0.0052
g_im= 0.0374 +/- 0.0100	g_im= 0.0802 +/- 0.0054	g_im= 0.0654 +/- 0.0028
corr= [-0.57]	corr= [-0.74]	corr= [ 0.45]

# k\_lcclcc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 50.67 / (57 - 8) = 1.03$

JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order0	-0.23422 +/- 0.18522	1.00	0.21	-0.83	0.18	-0.28	0.50	0.41	-0.16	
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_orde	0.24572 +/- 0.17058		1.00	-0.54	0.07	-0.09	0.05	0.25	-0.15	
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order0	-1.5503 +/- 0.42569			1.00	-0.39	0.48	-0.38	-0.67	0.43	
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_or	0.90384 +/- 1.3446				1.00	-0.98	0.01	0.08	0.04	
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_or	-1.6812 +/- 1.1897					1.00	-0.08	-0.15	-0.00	
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	-1.3651 +/- 0.15966						1.00	-0.07	0.21	
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order0	1.9054 +/- 1.1305							1.00	-0.94	
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order1	-0.51864 +/- 0.82934								1.00	
JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order1	0.0000 +/- 0									FIXED
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_orde	0.0000 +/- 0									FIXED
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order1	0.0000 +/- 0									FIXED
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order1	0.0000 +/- 0									FIXED

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13102 \pm 0.00073957) + (i/2) * (+5.2217e-17 \pm 1.5498e-14) [-0.00]$

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0							
k_re= 0.0000 +/- 0.0000	k_im= 0.0803 +/- 0.0003	corr= [ 0.00]	k_re= 0.0000 +/- 0.0000	k_im= 0.0715 +/- 0.0003	corr= [ 0.00]						
g = 0.0583 +/- 0.0124	arg(g)/pi= 0.0000 +/- 0.0000	g_re= 0.0583 +/- 0.0124	g_im= 0.0000 +/- 0.0000	corr= [-1.00]	g = 0.0209 +/- 0.0241	arg(g)/pi= -0.0000 +/- 0.0000	g = 0.0913 +/- 0.0037	arg(g)/pi= -0.0000 +/- 0.0000	g_re= 0.0913 +/- 0.0037	g_im= -0.0000 +/- 0.0000	corr= [-0.89]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

```

sqrt(s)_pole = (0.19852 +/- 0.0035389)
               + (i/2)*(-0.032997 +/- 0.0069252) [ 0.30]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0217 +/- 0.0034 | k_re= -0.0321 +/- 0.0036 | k_re= 0.0717 +/- 0.0024 |
k_im= 0.0378 +/- 0.0046 | k_im= 0.0255 +/- 0.0048 | k_im= -0.0114 +/- 0.0024 |
corr= [-0.09] | corr= [ 0.14] | corr= [ 0.30] |
=====
|g|= 0.1219 +/- 0.0244 | |g|= 0.1228 +/- 0.0208 | |g|= 0.1022 +/- 0.0138 |
arg(g)/pi= 0.0515 +/- 0.0341 | arg(g)/pi= 0.1371 +/- 0.0242 | arg(g)/pi= 0.5883 +/- 0.0339 |
=====
g_re= 0.1203 +/- 0.0245 | g_re= 0.1116 +/- 0.0204 | g_re= -0.0280 +/- 0.0093 |
g_im= 0.0196 +/- 0.0130 | g_im= 0.0513 +/- 0.0102 | g_im= 0.0983 +/- 0.0149 |
corr= [ 0.09] | corr= [ 0.45] | corr= [ 0.29] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

```

sqrt(s)_pole = (0.12632 +/- 0.0097708)
               + (i/2)*(-5.1799e-15 +/- 1.5562e-12) [ 0.01]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= 0.0822 +/- 0.0037 | k_im= -0.0736 +/- 0.0042 | k_im= 0.0279 +/- 0.0110 |
corr= [-0.01] | corr= [-0.01] | corr= [-0.01] |
=====
|g|= 0.0911 +/- 0.0378 | |g|= 0.0260 +/- 0.0459 | |g|= 0.0816 +/- 0.0127 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 |
=====
g_re= 0.0911 +/- 0.0378 | g_re= 0.0260 +/- 0.0459 | g_re= 0.0816 +/- 0.0127 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [-0.96] | corr= [-0.83] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

```

sqrt(s)_pole = (0.16824 +/- 0.031137)
               + (i/2)*(-0.091474 +/- 0.029155) [ 0.44]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0274 +/- 0.0098 | k_re= 0.0311 +/- 0.0118 | k_re= 0.0549 +/- 0.0188 |
k_im= 0.0703 +/- 0.0173 | k_im= -0.0618 +/- 0.0181 | k_im= -0.0351 +/- 0.0133 |
corr= [ 0.60] | corr= [ 0.66] | corr= [ 0.68] |
=====
|g|= 0.2035 +/- 0.0450 | |g|= 0.0751 +/- 0.0177 | |g|= 0.1382 +/- 0.0266 |
arg(g)/pi= -0.0716 +/- 0.0964 | arg(g)/pi= -0.1670 +/- 0.1700 | arg(g)/pi= 0.4634 +/- 0.0778 |
=====
g_re= 0.1984 +/- 0.0545 | g_re= 0.0650 +/- 0.0305 | g_re= 0.0159 +/- 0.0313 |
g_im= -0.0454 +/- 0.0534 | g_im= -0.0376 +/- 0.0316 | g_im= 0.1372 +/- 0.0294 |
corr= [ 0.74] | corr= [ 0.76] | corr= [-0.76] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

```

sqrt(s)_pole = (0.15955 +/- 0.060291)
               + (i/2)*(-0.12074 +/- 0.055488) [ 0.93]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0305 +/- 0.0113 | k_re= -0.0338 +/- 0.0143 | k_re= -0.0527 +/- 0.0291 |
k_im= -0.0788 +/- 0.0313 | k_im= 0.0713 +/- 0.0327 | k_im= 0.0457 +/- 0.0281 |
corr= [ 0.89] | corr= [ 0.92] | corr= [ 0.96] |
=====
|g|= 0.0548 +/- 0.0184 | |g|= 0.1588 +/- 0.0260 | |g|= 0.0796 +/- 0.0363 |
arg(g)/pi= 0.3725 +/- 0.1343 | arg(g)/pi= 0.1380 +/- 0.0346 | arg(g)/pi= 0.0195 +/- 0.0565 |
=====
g_re= 0.0214 +/- 0.0245 | g_re= 0.1441 +/- 0.0289 | g_re= 0.0794 +/- 0.0356 |
g_im= 0.0505 +/- 0.0165 | g_im= 0.0667 +/- 0.0119 | g_im= 0.0049 +/- 0.0160 |
corr= [ 0.05] | corr= [-0.14] | corr= [ 0.84] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

```

sqrt(s)_pole = (0.18065 +/- 0.024611)
               + (i/2)*(-0.076823 +/- 0.02085) [ 0.06]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0283 +/- 0.0113 | k_re= -0.0333 +/- 0.0137 | k_re= 0.0617 +/- 0.0164 |
k_im= -0.0613 +/- 0.0144 | k_im= 0.0522 +/- 0.0145 | k_im= -0.0281 +/- 0.0080 |
corr= [ 0.68] | corr= [ 0.70] | corr= [ 0.42] |
=====
|g|= 0.0603 +/- 0.0219 | |g|= 0.1882 +/- 0.0432 | |g|= 0.0795 +/- 0.0515 |
arg(g)/pi= 0.0229 +/- 0.1659 | arg(g)/pi= 0.1078 +/- 0.0725 | arg(g)/pi= 0.7108 +/- 0.1378 |
=====
g_re= 0.0602 +/- 0.0237 | g_re= 0.1775 +/- 0.0542 | g_re= -0.0489 +/- 0.0098 |
g_im= 0.0043 +/- 0.0301 | g_im= 0.0625 +/- 0.0276 | g_im= 0.0627 +/- 0.0612 |
corr= [-0.81] | corr= [-0.89] | corr= [-0.50] |
=====

```

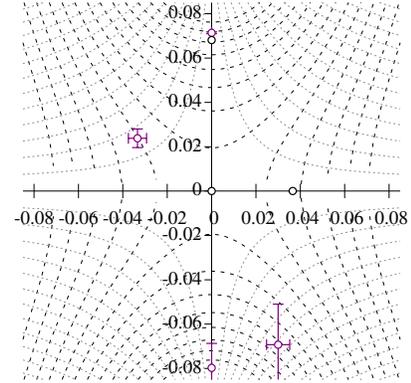
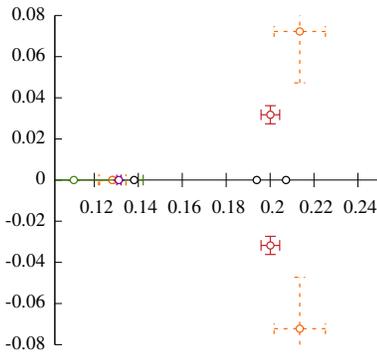
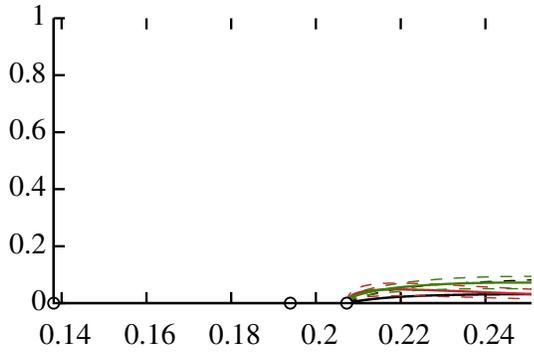
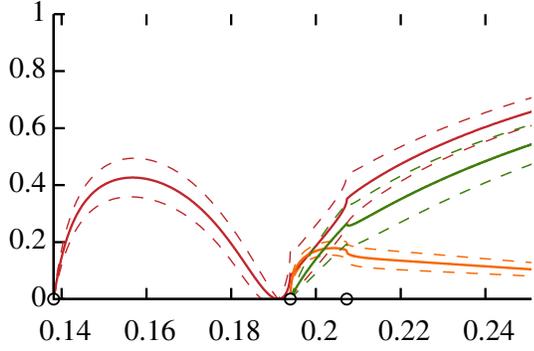
\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.13679 +/- 0.0017116)  
 + (i/2)\*(+5.9472e-15 +/- 1.7877e-12) [-0.06]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= -0.0779 +/- 0.0008	k_im= -0.0688 +/- 0.0009	k_im= -0.0096 +/- 0.0061
corr= [ 0.06]	corr= [ 0.06]	corr= [ 0.06]
g = 0.0157 +/- 0.0073	g = 0.0190 +/- 0.0088	g = 0.0698 +/- 0.0205
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000
g_re= 0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000
g_im= 0.0157 +/- 0.0073	g_im= 0.0190 +/- 0.0088	g_im= -0.0698 +/- 0.0205
corr= [-1.00]	corr= [-0.53]	corr= [ 0.81]

\*\*\*\*\*

# k\_llc1cc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 46.11 / (57 - 9) = 0.96$

JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order0	-0.18324 +/- 0.28051		1.00	-0.42	0.33	-0.66	-0.53	-0.40	0.09	0.13	-0.14	
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_orde	-0.20925 +/- 0.08904			1.00	-0.50	-0.10	0.30	-0.08	0.30	0.08	0.05	
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order0	-1.1452 +/- 0.26641				1.00	-0.25	-0.20	-0.43	0.02	-0.30	-0.02	
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_or	-0.18715 +/- 0.18954					1.00	0.03	0.24	0.01	-0.06	0.11	
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_or	-0.84889 +/- 0.24817						1.00	0.04	0.14	-0.15	0.12	
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	0.38634 +/- 0.31091							1.00	-0.81	-0.04	0.15	
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order1	-1.6799 +/- 0.2665								1.00	-0.10	0.08	
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order0	1.3111 +/- 0.65271									1.00	-0.90	
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order1	-0.33354 +/- 0.57855										1.00	
JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order1	0.0000 +/- 0											FIXED
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_orde	0.0000 +/- 0											FIXED
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order1	0.0000 +/- 0											FIXED

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13116 \pm 0.00096653)$   
 $+ (i/2) * (+7.999e-16 \pm 1.7314e-13) [-0.08]$

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0000 +/- 0.0000	k_im= 0.0803 +/- 0.0004	k_re= 0.0000 +/- 0.0000	k_im= 0.0714 +/- 0.0004	k_re= 0.0000 +/- 0.0000	k_im= 0.0217 +/- 0.0015
corr= [ 0.08]		corr= [ 0.08]		corr= [ 0.08]	
g = 0.0660 +/- 0.0161	arg(g)/pi= 0.0000 +/- 0.0000	g = 0.0757 +/- 0.0559	arg(g)/pi= -0.0000 +/- 0.0000	g = 0.0897 +/- 0.0034	arg(g)/pi= -0.0000 +/- 0.0000
g_re= 0.0660 +/- 0.0161	g_im= 0.0000 +/- 0.0000	g_re= 0.0757 +/- 0.0559	g_im= -0.0000 +/- 0.0000	g_re= 0.0897 +/- 0.0034	g_im= -0.0000 +/- 0.0000
corr= [-1.00]		corr= [-0.97]		corr= [-0.53]	

\*\*\*\*\*

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

```

sqrt(s)_pole = (0.20015 +/- 0.0042337)
               + (i/2)*(-0.031742 +/- 0.0044008) [ 0.40]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0222 +/- 0.0029 | k_re= -0.0334 +/- 0.0041 | k_re= 0.0728 +/- 0.0028 |
k_im= 0.0358 +/- 0.0049 | k_im= 0.0238 +/- 0.0042 | k_im= -0.0109 +/- 0.0016 |
corr= [ 0.52] | corr= [ 0.66] | corr= [ 0.47] |
=====
|g|= 0.0977 +/- 0.0251 | |g|= 0.1424 +/- 0.0200 | |g|= 0.1051 +/- 0.0061 |
arg(g)/pi= 0.1469 +/- 0.0498 | arg(g)/pi= 0.1902 +/- 0.0268 | arg(g)/pi= 0.6124 +/- 0.0296 |
=====
g_re= 0.0875 +/- 0.0224 | g_re= 0.1177 +/- 0.0134 | g_re= -0.0363 +/- 0.0095 |
g_im= 0.0435 +/- 0.0191 | g_im= 0.0801 +/- 0.0191 | g_im= 0.0986 +/- 0.0064 |
corr= [ 0.46] | corr= [ 0.68] | corr= [ 0.26] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

```

sqrt(s)_pole = (0.11062 +/- 0.031638)
               + (i/2)*(+2.8356e-17 +/- 8.4787e-15) [ 0.02]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= 0.0876 +/- 0.0100 | k_im= -0.0797 +/- 0.0110 | k_im= 0.0413 +/- 0.0212 |
corr= [-0.01] | corr= [-0.01] | corr= [-0.01] |
=====
|g|= 0.0760 +/- 0.0182 | |g|= 0.0201 +/- 0.0077 | |g|= 0.0702 +/- 0.0283 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 |
=====
g_re= 0.0760 +/- 0.0182 | g_re= 0.0201 +/- 0.0077 | g_re= 0.0702 +/- 0.0283 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [-0.61] | corr= [-0.00] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

```

sqrt(s)_pole = ( 0.1575 +/- 0.027535)
               + (i/2)*(-0.10551 +/- 0.041861) [ 0.86]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0269 +/- 0.0045 | k_re= 0.0300 +/- 0.0052 | k_re= 0.0498 +/- 0.0124 |
k_im= 0.0772 +/- 0.0170 | k_im= -0.0693 +/- 0.0183 | k_im= -0.0417 +/- 0.0183 |
corr= [ 0.10] | corr= [ 0.33] | corr= [ 0.85] |
=====
|g|= 0.1262 +/- 0.0233 | |g|= 0.0593 +/- 0.0091 | |g|= 0.1344 +/- 0.0141 |
arg(g)/pi= -0.0714 +/- 0.1015 | arg(g)/pi= -0.3441 +/- 0.1427 | arg(g)/pi= 0.5071 +/- 0.0333 |
=====
g_re= 0.1231 +/- 0.0287 | g_re= 0.0279 +/- 0.0252 | g_re= -0.0030 +/- 0.0140 |
g_im= -0.0281 +/- 0.0366 | g_im= -0.0523 +/- 0.0124 | g_im= 0.1344 +/- 0.0141 |
corr= [ 0.67] | corr= [ 0.68] | corr= [ 0.09] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

```

sqrt(s)_pole = ( 0.1771 +/- 0.017475)
               + (i/2)*(-0.093898 +/- 0.017647) [-0.48]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0312 +/- 0.0097 | k_re= -0.0357 +/- 0.0110 | k_re= -0.0608 +/- 0.0119 |
k_im= -0.0665 +/- 0.0073 | k_im= 0.0582 +/- 0.0071 | k_im= 0.0342 +/- 0.0049 |
corr= [ 0.68] | corr= [ 0.63] | corr= [-0.07] |
=====
|g|= 0.0844 +/- 0.0154 | |g|= 0.1636 +/- 0.0195 | |g|= 0.0822 +/- 0.0079 |
arg(g)/pi= 0.3351 +/- 0.0491 | arg(g)/pi= 0.2374 +/- 0.0339 | arg(g)/pi= -0.1033 +/- 0.0573 |
=====
g_re= 0.0418 +/- 0.0130 | g_re= 0.1201 +/- 0.0113 | g_re= 0.0779 +/- 0.0110 |
g_im= 0.0733 +/- 0.0154 | g_im= 0.1110 +/- 0.0236 | g_im= -0.0262 +/- 0.0126 |
corr= [ 0.10] | corr= [ 0.21] | corr= [ 0.75] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

```

sqrt(s)_pole = (0.12816 +/- 0.0062633)
               + (i/2)*(+3.7033e-18 +/- 1.1069e-15) [-0.01]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= -0.0815 +/- 0.0025 | k_im= 0.0728 +/- 0.0028 | k_im= -0.0257 +/- 0.0078 |
corr= [ 0.01] | corr= [ 0.01] | corr= [ 0.01] |
=====
|g|= 0.0387 +/- 0.0097 | |g|= 0.0095 +/- 0.0236 | |g|= 0.0987 +/- 0.0069 |
arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 |
=====
g_re= 0.0000 +/- 0.0000 | g_re= -0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 |
g_im= 0.0387 +/- 0.0097 | g_im= 0.0095 +/- 0.0236 | g_im= -0.0987 +/- 0.0069 |
corr= [-1.00] | corr= [-0.98] | corr= [-0.34] |
=====

```

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.21351 +/- 0.011673)  
 + (i/2)\*(-0.072229 +/- 0.02501) [-0.07]

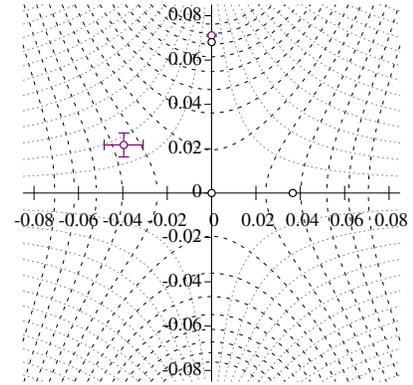
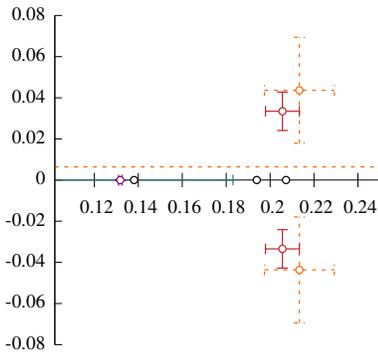
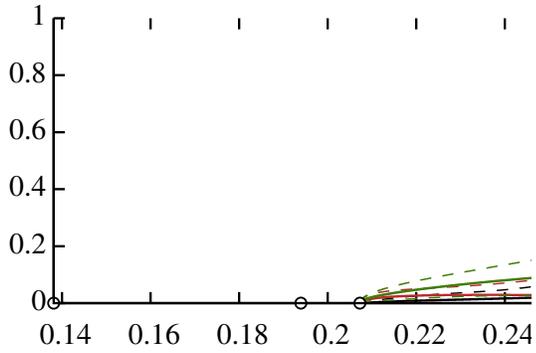
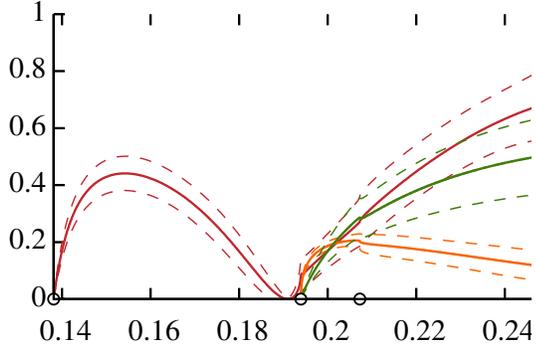
eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0458 +/- 0.0107	k_re= -0.0542 +/- 0.0101	k_re= 0.0827 +/- 0.0074			
k_im= -0.0421 +/- 0.0103	k_im= 0.0356 +/- 0.0101	k_im= -0.0233 +/- 0.0078			
corr= [-0.10]	corr= [-0.10]	corr= [-0.09]			
g = 0.0952 +/- 0.0175	g = 0.1895 +/- 0.0213	g = 0.1060 +/- 0.0109			
arg(g)/pi= 0.2040 +/- 0.0585	arg(g)/pi= 0.2628 +/- 0.0271	arg(g)/pi= 0.6893 +/- 0.0416			
g_re= 0.0763 +/- 0.0196	g_re= 0.1285 +/- 0.0151	g_re= -0.0594 +/- 0.0108			
g_im= 0.0569 +/- 0.0151	g_im= 0.1393 +/- 0.0221	g_im= 0.0878 +/- 0.0139			
corr= [-0.08]	corr= [ 0.26]	corr= [ 0.36]			

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.12839 +/- 0.0060217)  
 + (i/2)\*(+2.2404e-14 +/- 6.699e-12) [-0.02]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000			
k_im= -0.0814 +/- 0.0024	k_im= -0.0727 +/- 0.0027	k_im= -0.0255 +/- 0.0076			
corr= [ 0.02]	corr= [ 0.02]	corr= [ 0.02]			
g = 0.0369 +/- 0.0080	g = 0.0026 +/- 0.0061	g = 0.1014 +/- 0.0069			
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000			
g_re= 0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000			
g_im= 0.0369 +/- 0.0080	g_im= 0.0026 +/- 0.0061	g_im= -0.1014 +/- 0.0069			
corr= [-1.00]	corr= [-0.98]	corr= [ 0.28]			

# k\_sigma\_pole\_cccccc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 43.01 / (57 - 10) = 0.92$

JP0+_g_eta:eta/1^S_0_pole0	-0.18420 +/- 0.2049	1.00	0.54	-0.59	-0.99	0.98	0.96	0.57	-0.08	-0.48	0.01
JP0+_g_kaon:kaon/1^S_0_pole0	0.35487 +/- 0.063106	1.00	-0.05	-0.56	0.47	0.55	0.97	0.21	-0.53	-0.05	
JP0+_g_pi:pi/1^S_0_pole0	0.20742 +/- 0.02861		1.00	0.57	-0.60	-0.62	-0.10	0.62	0.61	0.10	
JP0+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order0	1.1320 +/- 2.4267			1.00	-0.98	-0.97	-0.59	0.08	0.50	-0.01	
JP0+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_orde	-2.3389 +/- 2.2518				1.00	0.94	0.52	-0.11	-0.46	0.01	
JP0+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order0	-0.40581 +/- 1.5209					1.00	0.58	-0.16	-0.60	-0.02	
JP0+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_or	4.0875 +/- 1.4686						1.00	0.27	-0.48	0.01	
JP0+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	0.19605 +/- 0.48623							1.00	0.67	0.23	
JP0+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order0	-0.41101 +/- 0.65552								1.00	0.19	
JP0+_m_pole0	0.13181 +/- 0.00074754									1.00	

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13181 \pm 0.00075932) + (i/2)*(-6.9527e-15 \pm 2.3792e-12) [-0.10]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= 0.0800 +/- 0.0003	k_im= 0.0711 +/- 0.0004	k_im= 0.0206 +/- 0.0012
corr= [ 0.10]	corr= [ 0.10]	corr= [ 0.10]
g = 0.0814 +/- 0.0882	g = 0.1569 +/- 0.0344	g = 0.0917 +/- 0.0047
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.0814 +/- 0.0882	g_re= -0.1569 +/- 0.0344	g_re= -0.0917 +/- 0.0047
g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000
corr= [-1.00]	corr= [-0.86]	corr= [ 0.03]

\*\*\*\*\*

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

$\text{sqrt}(s)_{\text{pole}} = (0.2056 \pm 0.0077181) + (i/2)*(-0.033423 \pm 0.0093446) [-0.22]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0273 +/- 0.0087	k_re= -0.0396 +/- 0.0088	k_re= 0.0765 +/- 0.0052
k_im= 0.0314 +/- 0.0070	k_im= 0.0217 +/- 0.0054	k_im= -0.0112 +/- 0.0031
corr= [ 0.47]	corr= [ 0.24]	corr= [-0.15]
g = 0.0664 +/- 0.0469	g = 0.1725 +/- 0.0366	g = 0.1248 +/- 0.0331
arg(g)/pi= 0.2636 +/- 0.1627	arg(g)/pi= -0.7142 +/- 0.0612	arg(g)/pi= -0.3273 +/- 0.0647
g_re= 0.0449 +/- 0.0509	g_re= -0.1075 +/- 0.0240	g_re= 0.0644 +/- 0.0356
g_im= 0.0489 +/- 0.0277	g_im= -0.1349 +/- 0.0431	g_im= -0.1069 +/- 0.0217
corr= [ 0.43]	corr= [-0.02]	corr= [-0.60]

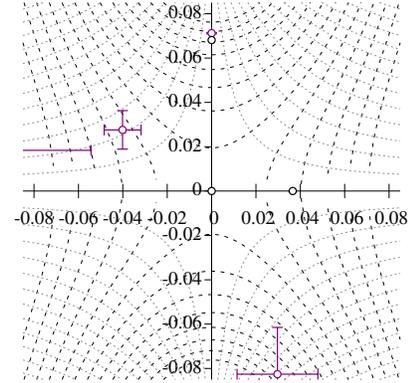
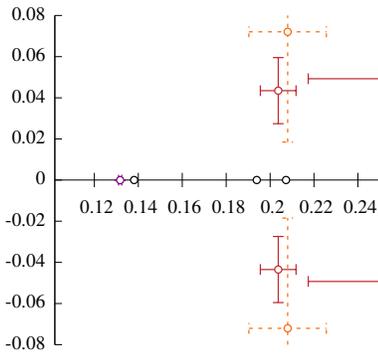
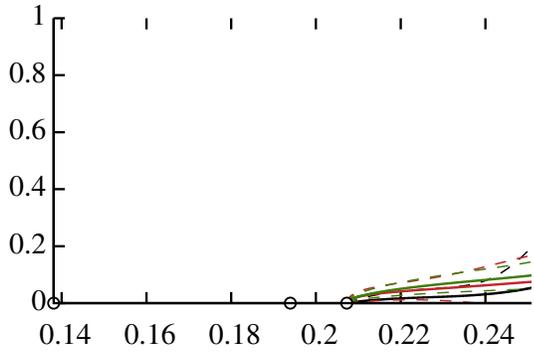
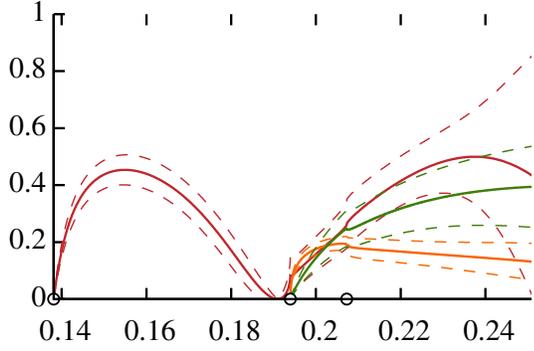
\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]  
 sqrt(s)\_pole = (0.07985 +/- 0.10329)  
 + (i/2)\*(+1.0098e-14 +/- 9.8776e-13) [ 0.02]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= 0.0956 +/- 0.0214	k_im= -0.0883 +/- 0.0231	k_im= -0.0562 +/- 0.0363
corr= [-0.02]	corr= [-0.02]	corr= [-0.02]
g = 0.0258 +/- 0.0201	g = 0.0165 +/- 0.0897	g = 0.0641 +/- 0.3458
arg(g)/pi= 0.5000 +/- 0.0003	arg(g)/pi= 0.5000 +/- 0.0132	arg(g)/pi= -0.5000 +/- 0.0131
g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0007	g_re= -0.0000 +/- 0.0026
g_im= 0.0258 +/- 0.0201	g_im= 0.0165 +/- 0.0897	g_im= -0.0641 +/- 0.3458
corr= [-0.42]	corr= [-0.51]	corr= [-0.51]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]  
 sqrt(s)\_pole = (0.21334 +/- 0.01591)  
 + (i/2)\*(-0.043642 +/- 0.025732) [-0.33]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0381 +/- 0.0186	k_re= -0.0491 +/- 0.0166	k_re= 0.0818 +/- 0.0104
k_im= -0.0306 +/- 0.0125	k_im= 0.0237 +/- 0.0113	k_im= -0.0142 +/- 0.0081
corr= [ 0.06]	corr= [-0.12]	corr= [-0.30]
g = 0.0704 +/- 0.0687	g = 0.1934 +/- 0.0466	g = 0.1324 +/- 0.0330
arg(g)/pi= 0.2230 +/- 0.2338	arg(g)/pi= -0.7006 +/- 0.1243	arg(g)/pi= -0.2694 +/- 0.1288
g_re= 0.0538 +/- 0.0507	g_re= -0.1139 +/- 0.0529	g_re= 0.0877 +/- 0.0570
g_im= 0.0454 +/- 0.0695	g_im= -0.1563 +/- 0.0712	g_im= -0.0991 +/- 0.0265
corr= [ 0.35]	corr= [-0.59]	corr= [ 0.49]

# k\_sigma\_pole\_lcccc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 42.09 / (57 - 11) = 0.92$

JPO+_g_eta:eta/1^S_0_pole0	-0.23773 +/- 0.17567	1.00	0.57	-0.62	-0.99	0.97	0.96	0.61	0.02	-0.24	-0.23	0.07
JPO+_g_kaon:kaon/1^S_0_pole0	0.32291 +/- 0.055163	1.00	-0.10	-0.59	0.46	0.54	0.96	0.35	-0.27	-0.13	0.01	
JPO+_g_pi:pi/1^S_0_pole0	0.20469 +/- 0.027226		1.00	0.61	-0.65	-0.68	-0.17	0.49	0.46	0.15	0.06	
JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order0	1.8785 +/- 2.6217			1.00	-0.98	-0.97	-0.63	-0.04	0.24	0.23	-0.07	
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_orde	-2.8635 +/- 1.6516				1.00	0.94	0.52	-0.05	-0.20	-0.26	0.07	
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order0	-0.70754 +/- 1.2603					1.00	0.57	-0.05	-0.35	-0.20	0.04	
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_or	3.2928 +/- 1.2475						1.00	0.39	-0.22	-0.16	0.07	
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	0.16769 +/- 0.42788							1.00	0.39	0.21	0.19	
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order0	-0.84937 +/- 0.58298								1.00	-0.53	0.16	
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order1	0.67490 +/- 0.49776									1.00	-0.07	
JPO+_m_pole0	0.13173 +/- 0.00074613										1.00	
JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order1	0.0000 +/- 0											FIXED
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_orde	0.0000 +/- 0											FIXED
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order1	0.0000 +/- 0											FIXED
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_or	0.0000 +/- 0											FIXED
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order1	0.0000 +/- 0											FIXED

## pole singularities

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13173 \pm 0.00070979) + (i/2)(-8.5784e-15 \pm 1.718e-12) [0.43]$

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= -0.0000 +/- 0.0000	k_im= 0.0800 +/- 0.0003	corr= [-0.43]	k_re= -0.0000 +/- 0.0000	k_im= 0.0712 +/- 0.0003	corr= [-0.43]
g = 0.1064 +/- 0.0710	arg(g)/pi= 0.0000 +/- 0.0000		g = 0.1445 +/- 0.0321	arg(g)/pi= 1.0000 +/- 0.0000	
g_re= 0.1064 +/- 0.0710	g_im= 0.0000 +/- 0.0000	corr= [-1.00]	g_re= -0.1445 +/- 0.0321	g_im= 0.0000 +/- 0.0000	corr= [-0.91]
			g = 0.0916 +/- 0.0045	arg(g)/pi= 1.0000 +/- 0.0000	
			g_re= -0.0916 +/- 0.0045	g_im= 0.0000 +/- 0.0000	corr= [-0.10]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.20371 +/- 0.0081359)  
+ (i/2)\*(-0.043457 +/- 0.016059) [ 0.07]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0298 +/- 0.0084	k_re= -0.0401 +/- 0.0083	k_re= 0.0755 +/- 0.0054
k_im= 0.0371 +/- 0.0090	k_im= 0.0276 +/- 0.0087	k_im= -0.0147 +/- 0.0054
corr= [ 0.02]	corr= [ 0.05]	corr= [ 0.07]
g = 0.0803 +/- 0.0424	g = 0.1867 +/- 0.0397	g = 0.1445 +/- 0.0444
arg(g)/pi= 0.2104 +/- 0.1260	arg(g)/pi= -0.7778 +/- 0.0873	arg(g)/pi= -0.4005 +/- 0.1068
g_re= 0.0634 +/- 0.0485	g_re= -0.1430 +/- 0.0474	g_re= 0.0444 +/- 0.0455
g_im= 0.0493 +/- 0.0214	g_im= -0.1200 +/- 0.0442	g_im= -0.1375 +/- 0.0474
corr= [ 0.16]	corr= [-0.27]	corr= [ 0.21]

\*\*\*\*\*

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.25878 +/- 0.041399)  
+ (i/2)\*(-0.049251 +/- 0.069505) [-0.78]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0791 +/- 0.0360	k_re= -0.0867 +/- 0.0324	k_re= 0.1097 +/- 0.0249
k_im= 0.0201 +/- 0.0236	k_im= 0.0184 +/- 0.0227	k_im= -0.0145 +/- 0.0197
corr= [-0.75]	corr= [-0.76]	corr= [-0.78]
g = 0.0490 +/- 0.0491	g = 0.1195 +/- 0.0512	g = 0.1750 +/- 0.0792
arg(g)/pi= 0.2975 +/- 0.5108	arg(g)/pi= -0.1869 +/- 0.2336	arg(g)/pi= 0.2505 +/- 0.0976
g_re= 0.0291 +/- 0.0817	g_re= 0.0995 +/- 0.0743	g_re= 0.1236 +/- 0.0498
g_im= 0.0395 +/- 0.0440	g_im= -0.0662 +/- 0.0693	g_im= 0.1240 +/- 0.0817
corr= [-0.35]	corr= [ 0.56]	corr= [ 0.42]

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\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.13763 +/- 0.055083)  
+ (i/2)\*(-0.14242 +/- 0.061371) [ 0.22]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0274 +/- 0.0165	k_re= 0.0297 +/- 0.0182	k_re= 0.0434 +/- 0.0265
k_im= 0.0896 +/- 0.0202	k_im= -0.0826 +/- 0.0211	k_im= -0.0564 +/- 0.0217
corr= [ 0.53]	corr= [ 0.55]	corr= [ 0.53]
g = 0.0768 +/- 0.1549	g = 0.0473 +/- 0.0149	g = 0.1189 +/- 0.0353
arg(g)/pi= 0.2105 +/- 0.6263	arg(g)/pi= -0.4706 +/- 0.1242	arg(g)/pi= 0.5390 +/- 0.0402
g_re= 0.0606 +/- 0.2119	g_re= 0.0044 +/- 0.0191	g_re= -0.0145 +/- 0.0154
g_im= 0.0472 +/- 0.0436	g_im= -0.0471 +/- 0.0142	g_im= 0.1180 +/- 0.0351
corr= [-0.53]	corr= [-0.41]	corr= [-0.21]

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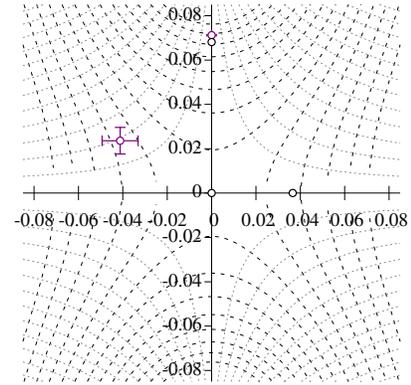
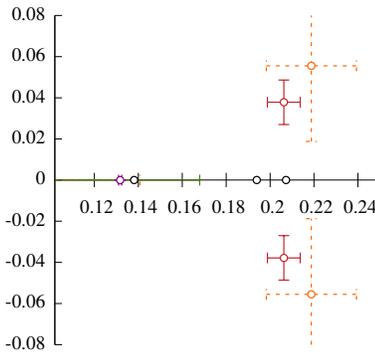
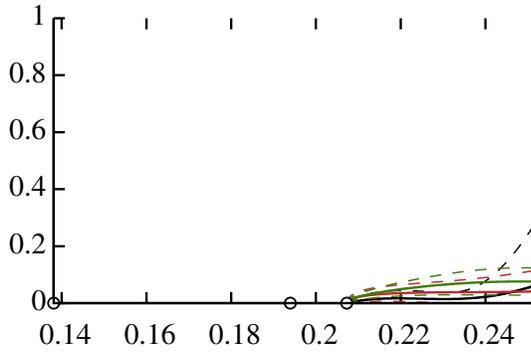
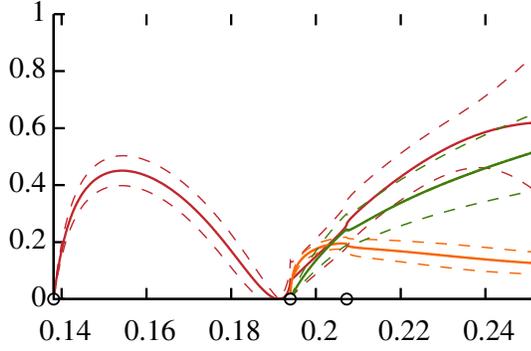
\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.20799 +/- 0.017616)  
+ (i/2)\*(-0.072048 +/- 0.053587) [ 0.05]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0419 +/- 0.0180	k_re= -0.0499 +/- 0.0164	k_re= 0.0792 +/- 0.0112
k_im= -0.0447 +/- 0.0209	k_im= 0.0375 +/- 0.0216	k_im= -0.0236 +/- 0.0171
corr= [-0.37]	corr= [-0.31]	corr= [-0.06]
g = 0.0760 +/- 0.0741	g = 0.2198 +/- 0.0884	g = 0.1552 +/- 0.0555
arg(g)/pi= 0.0298 +/- 0.2220	arg(g)/pi= -0.8310 +/- 0.1350	arg(g)/pi= -0.3889 +/- 0.1154
g_re= 0.0757 +/- 0.0734	g_re= -0.1896 +/- 0.0877	g_re= 0.0531 +/- 0.0563
g_im= 0.0071 +/- 0.0540	g_im= -0.1113 +/- 0.0939	g_im= -0.1458 +/- 0.0555
corr= [ 0.17]	corr= [-0.02]	corr= [ 0.01]

\*\*\*\*\*

# k\_sigma\_pole\_ccclcc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 42.02 / (57 - 11) = 0.91$

JPO+_g_eta:eta/1^S_0_pole0	-0.26840 +/- 0.17387	1.00	0.57	-0.73	-0.99	0.88	0.95	0.29	0.20	0.10	-0.53	-0.03
JPO+_g_kaon:kaon/1^S_0_pole0	0.21784 +/- 0.072849	1.00	-0.16	-0.58	0.24	0.54	0.53	0.26	0.45	-0.50	-0.02	
JPO+_g_pi:pi/1^S_0_pole0	0.19244 +/- 0.029297	1.00	0.72	-0.75	-0.76	-0.08	-0.10	0.31	0.64	0.11		
JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order0	2.2975 +/- 2.8829	1.00	-0.89	-0.96	-0.28	-0.22	-0.10	0.54	0.03			
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_orde	-2.2210 +/- 1.0807	1.00	0.86	0.06	0.20	-0.15	-0.42	-0.05				
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order0	-0.77240 +/- 1.2384	1.00	0.22	0.24	0.00	-0.65	-0.06					
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_or	-1.6187 +/- 1.3914	1.00	-0.65	0.52	-0.16	0.03						
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_or	2.4137 +/- 0.96671	1.00	-0.14	-0.23	-0.00							
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	-0.70162 +/- 0.40644	1.00	0.42	0.19								
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order0	-0.25036 +/- 0.52797	1.00	0.18									
JPO+_m_pole0	0.13173 +/- 0.00074241	1.00										
JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order1	0.0000 +/- 0											FIXED
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_orde	0.0000 +/- 0											FIXED
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order1	0.0000 +/- 0											FIXED
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order1	0.0000 +/- 0											FIXED
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order1	0.0000 +/- 0											FIXED

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13173 \pm 0.00071217) + (i/2)*(-2.3263e-13 \pm 1.4984e-11) [0.66]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= 0.0800 +/- 0.0003	k_im= 0.0712 +/- 0.0003	k_im= 0.0208 +/- 0.0011
corr= [-0.66]	corr= [-0.66]	corr= [-0.66]
g = 0.1296 +/- 0.0700	g = 0.1052 +/- 0.0427	g = 0.0930 +/- 0.0044
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.1296 +/- 0.0700	g_re= -0.1052 +/- 0.0427	g_re= -0.0930 +/- 0.0044
g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000
corr= [-1.00]	corr= [-0.92]	corr= [-0.30]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.20626 +/- 0.0074652)  
+ (i/2)\*(-0.037816 +/- 0.010824) [-0.13]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0297 +/- 0.0082	k_re= -0.0412 +/- 0.0081	k_re= 0.0771 +/- 0.0050
k_im= 0.0328 +/- 0.0070	k_im= 0.0236 +/- 0.0060	k_im= -0.0127 +/- 0.0036
corr= [ 0.30]	corr= [ 0.16]	corr= [-0.08]
g = 0.0843 +/- 0.0349	g = 0.1718 +/- 0.0336	g = 0.1339 +/- 0.0345
arg(g)/pi= 0.2844 +/- 0.1138	arg(g)/pi= -0.7451 +/- 0.0528	arg(g)/pi= -0.3395 +/- 0.0595
g_re= 0.0528 +/- 0.0374	g_re= -0.1196 +/- 0.0298	g_re= 0.0647 +/- 0.0327
g_im= 0.0657 +/- 0.0270	g_im= -0.1233 +/- 0.0325	g_im= -0.1173 +/- 0.0272
corr= [ 0.23]	corr= [ 0.16]	corr= [-0.49]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.077324 +/- 0.090641)  
+ (i/2)\*(-2.0303e-13 +/- 4.5604e-11) [ 0.09]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= 0.0961 +/- 0.0181	k_im= -0.0889 +/- 0.0196	k_im= 0.0571 +/- 0.0305
corr= [-0.11]	corr= [-0.11]	corr= [-0.12]
g = 0.2611 +/- 0.0608	g = 0.0155 +/- 0.0134	g = 0.0570 +/- 0.0296
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.2611 +/- 0.0608	g_re= -0.0155 +/- 0.0134	g_re= -0.0570 +/- 0.0296
g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000
corr= [-1.00]	corr= [-0.85]	corr= [-0.90]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.10933 +/- 0.049539)  
+ (i/2)\*(-0.11699 +/- 0.11075) [ 0.49]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0169 +/- 0.0126	k_re= 0.0183 +/- 0.0134	k_re= 0.0274 +/- 0.0178
k_im= 0.0943 +/- 0.0205	k_im= -0.0872 +/- 0.0221	k_im= -0.0582 +/- 0.0310
corr= [-0.25]	corr= [-0.22]	corr= [ 0.04]
g = 0.2031 +/- 0.0549	g = 0.0338 +/- 0.0103	g = 0.0949 +/- 0.0529
arg(g)/pi= 0.0704 +/- 0.1507	arg(g)/pi= 0.5279 +/- 0.2806	arg(g)/pi= -0.6934 +/- 0.2989
g_re= 0.1981 +/- 0.0490	g_re= -0.0030 +/- 0.0301	g_re= -0.0542 +/- 0.0906
g_im= 0.0445 +/- 0.0992	g_im= 0.0337 +/- 0.0093	g_im= -0.0779 +/- 0.0503
corr= [ 0.12]	corr= [-0.26]	corr= [-0.37]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.24325 +/- 0.018233)  
+ (i/2)\*(-0.089961 +/- 0.12807) [ 0.74]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0710 +/- 0.0104	k_re= -0.0782 +/- 0.0087	k_re= -0.1012 +/- 0.0088
k_im= -0.0385 +/- 0.0498	k_im= 0.0350 +/- 0.0472	k_im= 0.0270 +/- 0.0383
corr= [-0.46]	corr= [-0.12]	corr= [ 0.58]
g = 0.1365 +/- 1.4589	g = 0.0893 +/- 0.9938	g = 0.0082 +/- 0.1422
arg(g)/pi= -0.4749 +/- 0.2970	arg(g)/pi= 0.5908 +/- 0.1824	arg(g)/pi= 0.5127 +/- 1.6784
g_re= 0.0107 +/- 0.1047	g_re= -0.0251 +/- 0.2591	g_re= -0.0003 +/- 0.0403
g_im= -0.1361 +/- 1.4607	g_im= 0.0857 +/- 0.9608	g_im= 0.0082 +/- 0.1431
corr= [-0.33]	corr= [-0.98]	corr= [ 0.49]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = ( 0.2188 +/- 0.020541)  
+ (i/2)\*(-0.0555 +/- 0.036711) [-0.14]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0461 +/- 0.0205	k_re= -0.0558 +/- 0.0187	k_re= 0.0856 +/- 0.0131
k_im= -0.0330 +/- 0.0172	k_im= 0.0272 +/- 0.0157	k_im= -0.0177 +/- 0.0115
corr= [ 0.01]	corr= [-0.04]	corr= [-0.12]
g = 0.0986 +/- 0.1009	g = 0.2047 +/- 0.0739	g = 0.1430 +/- 0.0453
arg(g)/pi= 0.1465 +/- 0.4302	arg(g)/pi= -0.7103 +/- 0.1622	arg(g)/pi= -0.2419 +/- 0.1558
g_re= 0.0884 +/- 0.1001	g_re= -0.1256 +/- 0.0896	g_re= 0.1036 +/- 0.0633
g_im= 0.0438 +/- 0.1338	g_im= -0.1616 +/- 0.0912	g_im= -0.0985 +/- 0.0542

corr= [-0.13] | corr= [-0.35] | corr= [ 0.42] |

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\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.24441 +/- 0.012943)  
+ (i/2)\*(-0.091676 +/- 0.14974) [ 0.13]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0720 +/- 0.0186	k_re= -0.0791 +/- 0.0145	k_re= 0.1020 +/- 0.0080
k_im= -0.0389 +/- 0.0544	k_im= 0.0354 +/- 0.0524	k_im= -0.0275 +/- 0.0440
corr= [-0.83]	corr= [-0.75]	corr= [-0.30]
g = 0.1589 +/- 0.0718	g = 0.0833 +/- 0.1437	g = 0.0337 +/- 0.2208
arg(g)/pi= -0.4350 +/- 0.1136	arg(g)/pi= 0.7049 +/- 0.7029	arg(g)/pi= -0.2231 +/- 1.0135
g_re= 0.0322 +/- 0.0559	g_re= -0.0500 +/- 0.1493	g_re= 0.0258 +/- 0.1830
g_im= -0.1556 +/- 0.0724	g_im= 0.0667 +/- 0.1795	g_im= -0.0218 +/- 0.1637
corr= [-0.00]	corr= [ 0.31]	corr= [-0.61]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.080578 +/- 0.060153)  
+ (i/2)\*(+4.2956e-14 +/- 1.2028e-11) [ 0.06]

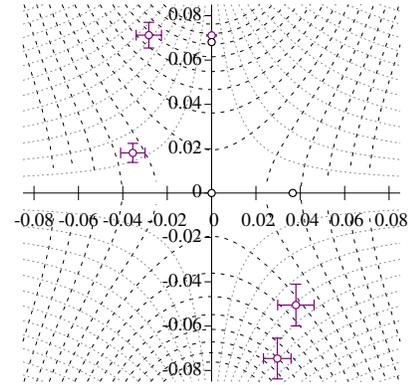
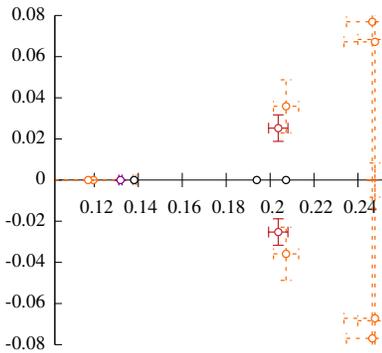
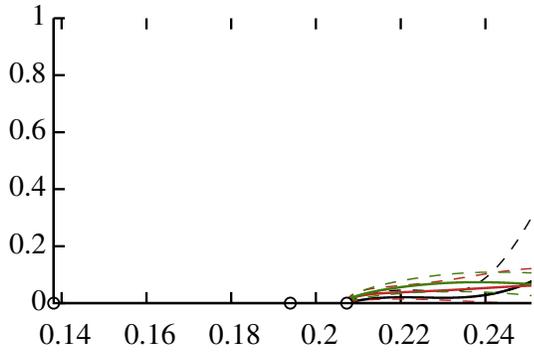
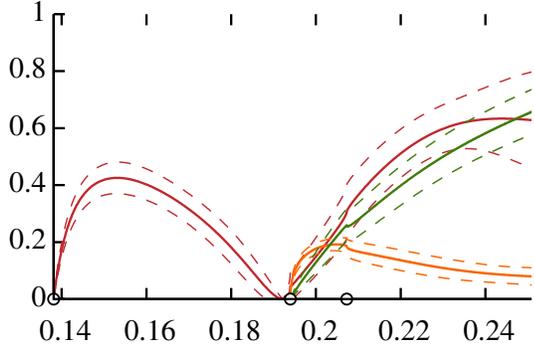
eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= -0.0955 +/- 0.0127	k_im= -0.0882 +/- 0.0137	k_im= -0.0560 +/- 0.0216
corr= [-0.06]	corr= [-0.06]	corr= [-0.06]
g = 0.0087 +/- 0.0095	g = 0.0176 +/- 0.0197	g = 0.0677 +/- 0.0680
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000	arg(g)/pi= 0.5000 +/- 0.0000
g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000
g_im= 0.0087 +/- 0.0095	g_im= -0.0176 +/- 0.0197	g_im= 0.0677 +/- 0.0680
corr= [-1.00]	corr= [-0.10]	corr= [ 0.43]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.24672 +/- 0.014889)  
+ (i/2)\*(-0.10273 +/- 0.14672) [-0.61]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0749 +/- 0.0240	k_re= 0.0816 +/- 0.0199	k_re= 0.1036 +/- 0.0112
k_im= -0.0423 +/- 0.0490	k_im= -0.0388 +/- 0.0480	k_im= -0.0306 +/- 0.0422
corr= [-0.92]	corr= [-0.90]	corr= [-0.78]
g = 0.1239 +/- 0.0457	g = 0.0271 +/- 0.0415	g = 0.0848 +/- 0.0665
arg(g)/pi= -0.4492 +/- 0.2296	arg(g)/pi= -0.5790 +/- 0.2636	arg(g)/pi= 0.0964 +/- 0.1242
g_re= 0.0197 +/- 0.0815	g_re= -0.0067 +/- 0.0232	g_re= 0.0810 +/- 0.0662
g_im= -0.1223 +/- 0.0585	g_im= -0.0263 +/- 0.0411	g_im= 0.0253 +/- 0.0337
corr= [ 0.95]	corr= [ 0.23]	corr= [ 0.26]

# k\_sigma\_pole\_llcccc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 40.51 / (57 - 12) = 0.90$

JPO+_g_eta:eta/1^S_0_pole0	-0.27654 +/- 0.13506	1.00	0.48	-0.63	-0.99	0.85	0.91	0.48	0.01	0.02	-0.09	-0.27	-0.03
JPO+_g_kaon:kaon/1^S_0_pole0	0.25176 +/- 0.069067	1.00	0.02	-0.49	0.07	0.40	0.95	0.17	0.16	-0.14	-0.12	-0.01	
JPO+_g_pi:pi/1^S_0_pole0	0.20033 +/- 0.02774	1.00	0.62	-0.69	-0.72	-0.01	0.09	0.23	0.36	0.22	0.11		
JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order0	2.5594 +/- 2.3523	1.00	-0.87	-0.92	-0.50	-0.00	-0.02	0.10	0.29	0.03			
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_orde	-2.7417 +/- 1.0656	1.00	0.83	0.10	-0.11	-0.07	-0.03	-0.31	-0.07				
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order0	-0.83787 +/- 1.0448	1.00	0.38	0.04	-0.14	-0.24	-0.32	-0.09					
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_or	1.8514 +/- 1.269	1.00	0.17	0.22	-0.09	-0.10	0.05						
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	2.6856 +/- 0.80636	1.00	-0.78	0.33	-0.14	0.06							
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order1	-2.6978 +/- 0.75592	1.00	-0.19	0.36	0.07								
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order0	1.5634 +/- 0.65022	1.00	-0.59	0.16									
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order1	-1.5530 +/- 0.6674	1.00	-0.09	-0.01									
JPO+_m_pole0	0.13190 +/- 0.00073828												1.00
JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order1	0.0000 +/- 0												FIXED
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_orde	0.0000 +/- 0												FIXED
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order1	0.0000 +/- 0												FIXED
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_or	0.0000 +/- 0												FIXED

## pole singularities

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = ( 0.1319 +/- 0.00073442)  
+ (i/2)\*(+1.721e-13 +/- 5.9191e-11) [ 0.07]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0000 +/- 0.0000	k_im= 0.0799 +/- 0.0003	k_re= 0.0000 +/- 0.0000	k_im= 0.0711 +/- 0.0003	k_re= 0.0000 +/- 0.0000	k_im= 0.0205 +/- 0.0012
corr= [-0.07]		corr= [-0.07]		corr= [-0.07]	
g = 0.1275 +/- 0.0529	arg(g)/pi= 0.0000 +/- 0.0000	g = 0.1161 +/- 0.0347	arg(g)/pi= 1.0000 +/- 0.0000	g = 0.0924 +/- 0.0043	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.1275 +/- 0.0529	g_im= 0.0000 +/- 0.0000	g_re= -0.1161 +/- 0.0347	g_im= 0.0000 +/- 0.0000	g_re= -0.0924 +/- 0.0043	g_im= 0.0000 +/- 0.0000
corr= [-1.00]		corr= [-0.89]		corr= [-0.21]	

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\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = ( 0.1527 +/- 0.011728)  
+ (i/2)\*(-0.10567 +/- 0.020211) [ 0.00]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0255 +/- 0.0052	k_re= -0.0283 +/- 0.0057	k_re= 0.0470 +/- 0.0073
k_im= 0.0791 +/- 0.0054	k_im= 0.0712 +/- 0.0058	k_im= -0.0429 +/- 0.0066
corr= [ 0.14]	corr= [ 0.15]	corr= [ 0.11]
g = 0.1853 +/- 0.0602	g = 0.0558 +/- 0.0575	g = 0.0841 +/- 0.0129
arg(g)/pi= 0.0535 +/- 0.0677	arg(g)/pi= -0.7983 +/- 0.2553	arg(g)/pi= -0.8127 +/- 0.0382
g_re= 0.1827 +/- 0.0544	g_re= -0.0450 +/- 0.0570	g_re= -0.0700 +/- 0.0133
g_im= 0.0310 +/- 0.0471	g_im= -0.0330 +/- 0.0453	g_im= -0.0467 +/- 0.0096
corr= [ 0.81]	corr= [ 0.19]	corr= [ 0.14]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.20371 +/- 0.0044099)  
+ (i/2)\*(-0.025273 +/- 0.0064347) [-0.03]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0217 +/- 0.0053	k_re= -0.0355 +/- 0.0055	k_re= 0.0751 +/- 0.0030
k_im= 0.0296 +/- 0.0054	k_im= 0.0181 +/- 0.0043	k_im= -0.0086 +/- 0.0022
corr= [ 0.30]	corr= [ 0.21]	corr= [-0.00]
g = 0.0676 +/- 0.0227	g = 0.1255 +/- 0.0149	g = 0.0936 +/- 0.0122
arg(g)/pi= 0.2583 +/- 0.0777	arg(g)/pi= -0.7806 +/- 0.0391	arg(g)/pi= -0.3362 +/- 0.0335
g_re= 0.0465 +/- 0.0236	g_re= -0.0968 +/- 0.0124	g_re= 0.0461 +/- 0.0126
g_im= 0.0490 +/- 0.0152	g_im= -0.0798 +/- 0.0174	g_im= -0.0814 +/- 0.0094
corr= [ 0.37]	corr= [ 0.03]	corr= [-0.43]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.18676 +/- 0.010304)  
+ (i/2)\*(-0.082029 +/- 0.025824) [ 0.11]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0324 +/- 0.0080	k_re= 0.0380 +/- 0.0082	k_re= 0.0661 +/- 0.0067
k_im= 0.0591 +/- 0.0086	k_im= -0.0505 +/- 0.0094	k_im= -0.0290 +/- 0.0086
corr= [-0.23]	corr= [-0.20]	corr= [ 0.01]
g = 0.0030 +/- 0.0633	g = 0.0033 +/- 1.0739	g = 0.0051 +/- 1.6317
arg(g)/pi= 0.1041 +/- 15.2771	arg(g)/pi= 0.7408 +/- 8.6084	arg(g)/pi= -0.3646 +/- 10.6740
g_re= 0.0028 +/- 0.0370	g_re= -0.0023 +/- 0.6718	g_re= 0.0021 +/- 0.8267
g_im= 0.0009 +/- 0.1509	g_im= 0.0024 +/- 0.8426	g_im= -0.0046 +/- 1.4169
corr= [ 0.13]	corr= [-1.00]	corr= [-1.00]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.14956 +/- 0.014686)  
+ (i/2)\*(-0.11817 +/- 0.033083) [ 0.38]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0269 +/- 0.0059	k_re= 0.0296 +/- 0.0062	k_re= 0.0467 +/- 0.0076
k_im= 0.0821 +/- 0.0085	k_im= -0.0746 +/- 0.0092	k_im= -0.0473 +/- 0.0110
corr= [-0.20]	corr= [-0.15]	corr= [ 0.18]
g = 0.1849 +/- 0.0424	g = 0.0194 +/- 0.0162	g = 0.0771 +/- 0.0185
arg(g)/pi= 0.0633 +/- 0.0694	arg(g)/pi= 0.7760 +/- 0.1628	arg(g)/pi= -0.6862 +/- 0.1033
g_re= 0.1812 +/- 0.0366	g_re= -0.0148 +/- 0.0081	g_re= -0.0426 +/- 0.0208
g_im= 0.0365 +/- 0.0456	g_im= 0.0125 +/- 0.0171	g_im= -0.0643 +/- 0.0231
corr= [ 0.66]	corr= [-0.73]	corr= [-0.36]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.18766 +/- 0.010406)  
+ (i/2)\*(-0.11808 +/- 0.025938) [ 0.27]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0412 +/- 0.0062	k_re= -0.0461 +/- 0.0063	k_re= -0.0691 +/- 0.0060
k_im= -0.0672 +/- 0.0083	k_im= 0.0600 +/- 0.0088	k_im= 0.0401 +/- 0.0083
corr= [-0.19]	corr= [-0.12]	corr= [ 0.15]
g = 0.0559 +/- 0.0317	g = 0.1640 +/- 0.0187	g = 0.1235 +/- 0.0162
arg(g)/pi= 0.2874 +/- 0.0832	arg(g)/pi= -0.7984 +/- 0.0594	arg(g)/pi= -0.8599 +/- 0.0435
g_re= 0.0346 +/- 0.0142	g_re= -0.1322 +/- 0.0165	g_re= -0.1117 +/- 0.0102
g_im= 0.0439 +/- 0.0318	g_im= -0.0971 +/- 0.0319	g_im= -0.0526 +/- 0.0210

corr= [ 0.68] | corr= [-0.36] | corr= [ 0.58] |

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JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.24775 +/- 0.014146)  
+ (i/2)\*(-0.067175 +/- 0.075505) [-0.72]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0718 +/- 0.0173	k_re= -0.0796 +/- 0.0145	k_re= -0.1034 +/- 0.0093
k_im= -0.0289 +/- 0.0276	k_im= 0.0261 +/- 0.0263	k_im= 0.0201 +/- 0.0220
corr= [-0.86]	corr= [-0.84]	corr= [-0.78]
g = 0.1403 +/- 0.0253	g = 0.0705 +/- 0.0295	g = 0.0382 +/- 0.0236
arg(g)/pi= -0.4232 +/- 0.1200	arg(g)/pi= 0.6895 +/- 0.1168	arg(g)/pi= -0.4490 +/- 0.2101
g_re= 0.0335 +/- 0.0459	g_re= -0.0396 +/- 0.0294	g_re= 0.0061 +/- 0.0228
g_im= -0.1363 +/- 0.0365	g_im= 0.0584 +/- 0.0260	g_im= -0.0377 +/- 0.0260
corr= [ 0.95]	corr= [-0.19]	corr= [ 0.60]

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JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.24656 +/- 0.01178)  
+ (i/2)\*(-0.076943 +/- 0.077046) [-0.48]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0719 +/- 0.0148	k_re= -0.0795 +/- 0.0123	k_re= 0.1029 +/- 0.0078
k_im= -0.0330 +/- 0.0281	k_im= 0.0298 +/- 0.0269	k_im= -0.0230 +/- 0.0225
corr= [-0.80]	corr= [-0.76]	corr= [-0.60]
g = 0.1360 +/- 0.0375	g = 0.0745 +/- 0.0399	g = 0.0377 +/- 0.0171
arg(g)/pi= -0.4610 +/- 0.1132	arg(g)/pi= 0.5131 +/- 0.1389	arg(g)/pi= 0.3521 +/- 0.1751
g_re= 0.0166 +/- 0.0437	g_re= -0.0031 +/- 0.0335	g_re= 0.0169 +/- 0.0183
g_im= -0.1350 +/- 0.0429	g_im= 0.0744 +/- 0.0391	g_im= 0.0337 +/- 0.0196
corr= [ 0.96]	corr= [-0.61]	corr= [-0.29]

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JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.11717 +/- 0.020393)  
+ (i/2)\*(+1.0552e-14 +/- 5.0007e-12) [ 0.05]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= -0.0855 +/- 0.0070	k_im= 0.0773 +/- 0.0077	k_im= -0.0366 +/- 0.0162
corr= [-0.05]	corr= [-0.05]	corr= [-0.05]
g = 0.0191 +/- 0.0072	g = 0.0370 +/- 0.0493	g = 0.0744 +/- 0.0159
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= 0.5000 +/- 0.0000
g_re= 0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000
g_im= 0.0191 +/- 0.0072	g_im= 0.0370 +/- 0.0493	g_im= 0.0744 +/- 0.0159
corr= [-1.00]	corr= [-0.91]	corr= [ 0.31]

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\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.20728 +/- 0.0057319)  
+ (i/2)\*(-0.03585 +/- 0.012892) [-0.07]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0298 +/- 0.0075	k_re= -0.0418 +/- 0.0066	k_re= 0.0777 +/- 0.0038
k_im= -0.0311 +/- 0.0072	k_im= 0.0222 +/- 0.0068	k_im= -0.0120 +/- 0.0042
corr= [-0.13]	corr= [-0.13]	corr= [-0.08]
g = 0.0517 +/- 0.0221	g = 0.1331 +/- 0.0138	g = 0.0858 +/- 0.0087
arg(g)/pi= 0.1287 +/- 0.1309	arg(g)/pi= -0.7971 +/- 0.0430	arg(g)/pi= -0.2909 +/- 0.0360
g_re= 0.0475 +/- 0.0209	g_re= -0.1069 +/- 0.0117	g_re= 0.0524 +/- 0.0081
g_im= 0.0203 +/- 0.0224	g_im= -0.0792 +/- 0.0194	g_im= -0.0679 +/- 0.0102
corr= [ 0.12]	corr= [-0.14]	corr= [ 0.17]

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\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

sqrt(s)\_pole = ( 0.2563 +/- 0.016386)  
+ (i/2)\*(-0.068357 +/- 0.076289) [-0.74]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0785 +/- 0.0175	k_re= 0.0859 +/- 0.0151	k_re= -0.1085 +/- 0.0105
k_im= -0.0279 +/- 0.0270	k_im= -0.0255 +/- 0.0258	k_im= 0.0202 +/- 0.0219
corr= [-0.85]	corr= [-0.83]	corr= [-0.78]
g = 0.1268 +/- 0.0285	g = 0.0462 +/- 0.0143	g = 0.0723 +/- 0.0257
arg(g)/pi= -0.4518 +/- 0.1516	arg(g)/pi= -0.2197 +/- 0.1414	arg(g)/pi= -0.4632 +/- 0.0419

```

-----|-----|-----|
g_re= 0.0191 +/- 0.0554 | g_re= 0.0356 +/- 0.0170 | g_re= 0.0083 +/- 0.0095 |
g_im= -0.1253 +/- 0.0372 | g_im= -0.0294 +/- 0.0184 | g_im= -0.0719 +/- 0.0257 |
corr= [ 0.99] | corr= [ 0.34] | corr= [-0.13] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0[-] kaon:kaon/1^S_0[-] pi:pi/1^S_0[-]

```

```

sqrt(s)_pole = (0.11957 +/- 0.019536)
               + (i/2)*(+1.7407e-15 +/- 4.7187e-13) [ 0.08]

```

```

-----|-----|-----|
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= -0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= -0.0847 +/- 0.0069 | k_im= -0.0764 +/- 0.0076 | k_im= -0.0345 +/- 0.0168 |
corr= [-0.08] | corr= [-0.08] | corr= [-0.08] |
-----|-----|-----|
|g|= 0.0222 +/- 0.0087 | |g|= 0.0061 +/- 0.0071 | |g|= 0.0676 +/- 0.0164 |
arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= 0.5000 +/- 0.0000 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= -0.0000 +/- 0.0000 | g_re= -0.0000 +/- 0.0000 |
g_im= 0.0222 +/- 0.0087 | g_im= 0.0061 +/- 0.0071 | g_im= 0.0676 +/- 0.0164 |
corr= [-1.00] | corr= [-0.84] | corr= [ 0.29] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0[-] kaon:kaon/1^S_0[-] pi:pi/1^S_0[-]

```

```

sqrt(s)_pole = (0.24723 +/- 0.017058)
               + (i/2)*(-0.094404 +/- 0.091964) [-0.71]

```

```

-----|-----|-----|
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= 0.0743 +/- 0.0206 | k_re= 0.0813 +/- 0.0177 | k_re= 0.1037 +/- 0.0115 |
k_im= -0.0392 +/- 0.0304 | k_im= -0.0359 +/- 0.0299 | k_im= -0.0281 +/- 0.0263 |
corr= [-0.87] | corr= [-0.85] | corr= [-0.78] |
-----|-----|-----|
|g|= 0.1223 +/- 0.0327 | |g|= 0.0425 +/- 0.0243 | |g|= 0.0654 +/- 0.0251 |
arg(g)/pi= -0.4550 +/- 0.1569 | arg(g)/pi= -0.4830 +/- 0.1204 | arg(g)/pi= 0.2464 +/- 0.0952 |
-----|-----|-----|
g_re= 0.0173 +/- 0.0552 | g_re= 0.0023 +/- 0.0164 | g_re= 0.0468 +/- 0.0195 |
g_im= -0.1211 +/- 0.0408 | g_im= -0.0424 +/- 0.0241 | g_im= 0.0457 +/- 0.0252 |
corr= [ 0.99] | corr= [-0.24] | corr= [ 0.26] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0[-] kaon:kaon/1^S_0[-] pi:pi/1^S_0[-]

```

```

sqrt(s)_pole = (0.18684 +/- 0.0099448)
               + (i/2)*(-0.082053 +/- 0.02436) [ 0.12]

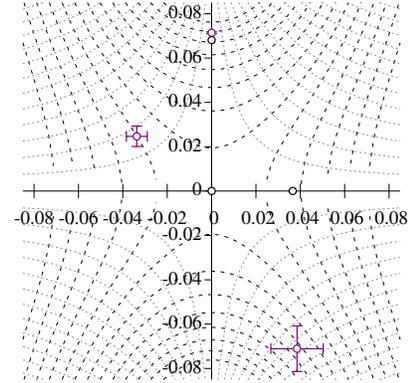
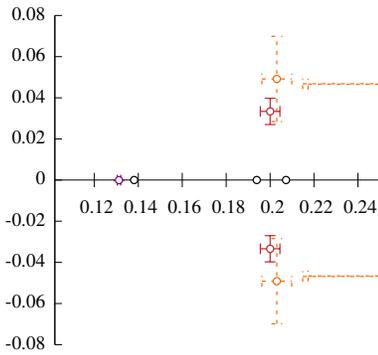
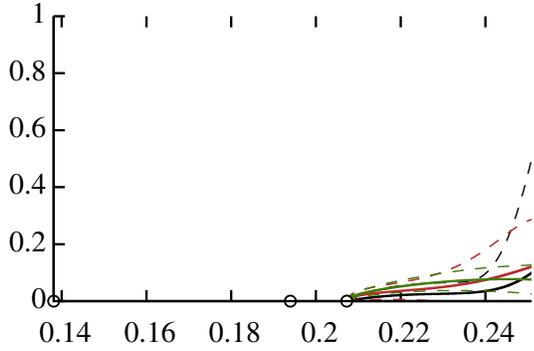
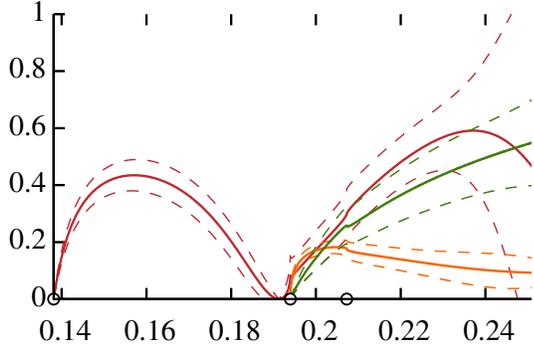
```

```

-----|-----|-----|
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= 0.0324 +/- 0.0075 | k_re= 0.0380 +/- 0.0078 | k_re= 0.0662 +/- 0.0065 |
k_im= -0.0591 +/- 0.0082 | k_im= -0.0504 +/- 0.0090 | k_im= -0.0290 +/- 0.0082 |
corr= [-0.21] | corr= [-0.18] | corr= [ 0.03] |
-----|-----|-----|
|g|= 0.0026 +/- 0.0124 | |g|= 0.0610 +/- 0.2185 | |g|= 0.0890 +/- 0.3170 |
arg(g)/pi= 0.1826 +/- 2.0806 | arg(g)/pi= 0.7039 +/- 0.0408 | arg(g)/pi= -0.3333 +/- 0.0923 |
-----|-----|-----|
g_re= 0.0022 +/- 0.0154 | g_re= -0.0365 +/- 0.1309 | g_re= 0.0445 +/- 0.1581 |
g_im= 0.0014 +/- 0.0144 | g_im= 0.0489 +/- 0.1751 | g_im= -0.0771 +/- 0.2760 |
corr= [-0.37] | corr= [-1.00] | corr= [-0.98] |
*****

```

# k\_sigma\_pole\_scccc\_Adler\_L0



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 45.74 / (57 - 10) = 0.97$

JPO+_g_eta:eta/1^S_0_pole0	1.3159 +/- 0.85844	1.00	-0.57	0.19	0.99	0.89	0.97	-0.61	-0.52	0.15	-0.05
JPO+_g_kaon:kaon/1^S_0_pole0	1.5849 +/- 0.60536	1.00	0.54	-0.61	-0.18	-0.50	0.99	0.91	-0.02	0.14	
JPO+_g_pi:pi/1^S_0_pole0	1.2460 +/- 0.14335			1.00	0.14	0.49	0.25	0.48	0.58	0.42	0.10
JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order0	55.103 +/- 70.511				1.00	0.88	0.97	-0.65	-0.56	0.15	-0.06
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	73.664 +/- 35.974					1.00	0.90	-0.24	-0.15	0.21	0.02
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order0	29.442 +/- 33.14						1.00	-0.54	-0.45	0.22	-0.03
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	73.114 +/- 66.756							1.00	0.92	-0.01	0.17
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	10.915 +/- 24.647								1.00	0.34	0.19
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order1	13.284 +/- 12.359									1.00	0.08
JPO+_m_pole0	0.13122 +/- 0.00078344										1.00
JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order1	0.0000 +/- 0										FIXED
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_order1	0.0000 +/- 0										FIXED
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order1	0.0000 +/- 0										FIXED
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order1	0.0000 +/- 0										FIXED
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order1	0.0000 +/- 0										FIXED
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order0	0.0000 +/- 0										FIXED

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13122 \pm 0.00077243) + (i/2)*(-1.7152e-14 \pm 3.7531e-12) [-0.15]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= 0.0802 +/- 0.0003	k_im= 0.0714 +/- 0.0004	k_im= 0.0216 +/- 0.0012
corr= [ 0.15]	corr= [ 0.15]	corr= [ 0.15]
g = 0.0941 +/- 0.0620	g = 0.1133 +/- 0.0385	g = 0.0891 +/- 0.0035
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= -0.0000 +/- 0.0000	arg(g)/pi= -0.0000 +/- 0.0000
g_re= 0.0941 +/- 0.0620	g_re= 0.1133 +/- 0.0385	g_re= 0.0891 +/- 0.0035
g_im= 0.0000 +/- 0.0000	g_im= -0.0000 +/- 0.0000	g_im= -0.0000 +/- 0.0000
corr= [-1.00]	corr= [-0.86]	corr= [-0.16]

\*\*\*\*\*

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]  
 \*\*\* not found on all cfigs \*\*\*  
 sqrt(s)\_pole = (0.07243 +/- 0.0044552)  
 + (i/2)\*(-7.5255e-13 +/- 2.0772e-11) [-0.21]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000
k_im= 0.0971 +/- 0.0008	k_im= 0.0900 +/- 0.0009	k_im= -0.0588 +/- 0.0014
corr= [ 0.21]	corr= [ 0.21]	corr= [ 0.21]
g = 0.4152 +/- 10.6602	g = 0.4161 +/- 10.6482	g = 0.4101 +/- 10.7230
arg(g)/pi= 0.2322 +/- 0.6495	arg(g)/pi= 0.2315 +/- 0.6717	arg(g)/pi= 0.2357 +/- 0.5270
g_re= 0.3095 +/- 7.3839	g_re= 0.3108 +/- 7.3701	g_re= 0.3027 +/- 7.4570
g_im= 0.2767 +/- 7.7354	g_im= 0.2767 +/- 7.7354	g_im= 0.2767 +/- 7.7354
corr= [ 1.00]	corr= [ 1.00]	corr= [ 1.00]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]  
 sqrt(s)\_pole = (0.20002 +/- 0.0044556)  
 + (i/2)\*(-0.033386 +/- 0.006384) [ 0.14]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0229 +/- 0.0040	k_re= -0.0337 +/- 0.0047	k_re= 0.0728 +/- 0.0030
k_im= 0.0365 +/- 0.0050	k_im= 0.0247 +/- 0.0046	k_im= -0.0115 +/- 0.0022
corr= [ 0.28]	corr= [ 0.35]	corr= [ 0.19]
g = 0.0693 +/- 0.0250	g = 0.1472 +/- 0.0093	g = 0.1077 +/- 0.0118
arg(g)/pi= 0.2167 +/- 0.1115	arg(g)/pi= 0.1937 +/- 0.0481	arg(g)/pi= 0.5958 +/- 0.0416
g_re= 0.0538 +/- 0.0303	g_re= 0.1208 +/- 0.0125	g_re= -0.0319 +/- 0.0138
g_im= 0.0436 +/- 0.0173	g_im= 0.0842 +/- 0.0206	g_im= 0.1028 +/- 0.0120
corr= [-0.09]	corr= [-0.65]	corr= [ 0.11]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]  
 sqrt(s)\_pole = (0.16644 +/- 0.026826)  
 + (i/2)\*(-0.13163 +/- 0.017964) [ 0.01]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0350 +/- 0.0105	k_re= 0.0385 +/- 0.0118	k_re= 0.0577 +/- 0.0154
k_im= 0.0783 +/- 0.0104	k_im= -0.0711 +/- 0.0103	k_im= -0.0475 +/- 0.0071
corr= [ 0.80]	corr= [ 0.79]	corr= [ 0.62]
g = 0.0383 +/- 0.1137	g = 0.0690 +/- 0.1973	g = 0.1145 +/- 0.3300
arg(g)/pi= 0.3925 +/- 0.6895	arg(g)/pi= 0.6851 +/- 0.0609	arg(g)/pi= -0.3976 +/- 0.0477
g_re= 0.0127 +/- 0.0749	g_re= -0.0379 +/- 0.1107	g_re= 0.0362 +/- 0.1075
g_im= 0.0361 +/- 0.1190	g_im= 0.0576 +/- 0.1639	g_im= -0.1086 +/- 0.3125
corr= [-0.06]	corr= [-0.99]	corr= [-0.99]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]  
 sqrt(s)\_pole = (0.25955 +/- 0.044672)  
 + (i/2)\*(-0.046829 +/- 0.034117) [-0.56]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0795 +/- 0.0363	k_re= -0.0872 +/- 0.0333	k_re= 0.1101 +/- 0.0264
k_im= -0.0191 +/- 0.0114	k_im= 0.0174 +/- 0.0109	k_im= -0.0138 +/- 0.0095
corr= [-0.26]	corr= [-0.35]	corr= [-0.50]
g = 0.0956 +/- 0.0441	g = 0.0182 +/- 0.0510	g = 0.0783 +/- 0.0622
arg(g)/pi= -0.2560 +/- 0.2975	arg(g)/pi= -0.2547 +/- 2.1247	arg(g)/pi= -0.7157 +/- 0.0836
g_re= 0.0663 +/- 0.0520	g_re= 0.0127 +/- 0.0632	g_re= -0.0491 +/- 0.0470
g_im= -0.0689 +/- 0.0850	g_im= -0.0130 +/- 0.1154	g_im= -0.0610 +/- 0.0457
corr= [ 0.70]	corr= [ 0.85]	corr= [ 0.83]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]  
 sqrt(s)\_pole = (0.20306 +/- 0.0067955)  
 + (i/2)\*(-0.04916 +/- 0.020712) [ 0.30]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0315 +/- 0.0075	k_re= -0.0410 +/- 0.0066	k_re= 0.0753 +/- 0.0043
k_im= -0.0397 +/- 0.0100	k_im= 0.0304 +/- 0.0105	k_im= -0.0166 +/- 0.0070
corr= [-0.41]	corr= [-0.23]	corr= [ 0.22]
g = 0.0532 +/- 0.0290	g = 0.1581 +/- 0.0193	g = 0.1091 +/- 0.0185
arg(g)/pi= 0.1155 +/- 0.1365	arg(g)/pi= 0.1775 +/- 0.0589	arg(g)/pi= 0.6466 +/- 0.0336
g_re= 0.0498 +/- 0.0285	g_re= 0.1341 +/- 0.0228	g_re= -0.0485 +/- 0.0127
g_im= 0.0189 +/- 0.0235	g_im= 0.0837 +/- 0.0266	g_im= 0.0977 +/- 0.0177

corr= [ 0.14] | corr= [-0.37] | corr= [-0.33] |

\*\*\*\*\*

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = ( 0.2599 +/- 0.042568)  
+ (i/2)\*(-0.046599 +/- 0.035345) [-0.47]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0798 +/- 0.0345	k_re= 0.0874 +/- 0.0316	k_re= 0.1103 +/- 0.0251
k_im= -0.0190 +/- 0.0124	k_im= -0.0173 +/- 0.0117	k_im= -0.0137 +/- 0.0100
corr= [-0.20]	corr= [-0.28]	corr= [-0.42]
g = 0.0875 +/- 0.0503	g = 0.0089 +/- 0.0259	g = 0.0863 +/- 0.0521
arg(g)/pi= -0.2394 +/- 0.1070	arg(g)/pi= 0.8965 +/- 2.1130	arg(g)/pi= -0.7157 +/- 0.1416
g_re= 0.0639 +/- 0.0260	g_re= -0.0084 +/- 0.0135	g_re= -0.0541 +/- 0.0327
g_im= -0.0598 +/- 0.0522	g_im= 0.0028 +/- 0.0629	g_im= -0.0672 +/- 0.0558
corr= [-0.67]	corr= [-0.20]	corr= [ 0.23]

\*\*\*\*\*

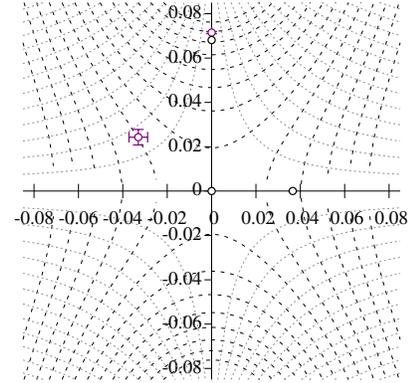
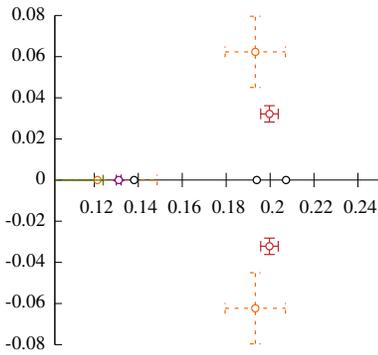
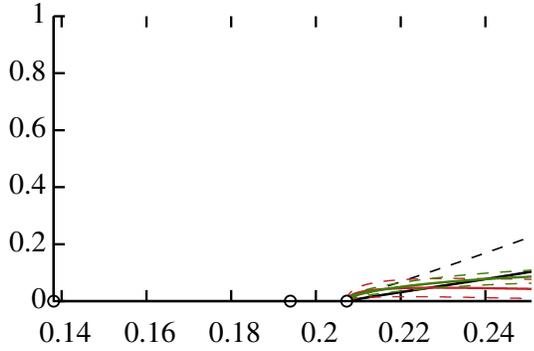
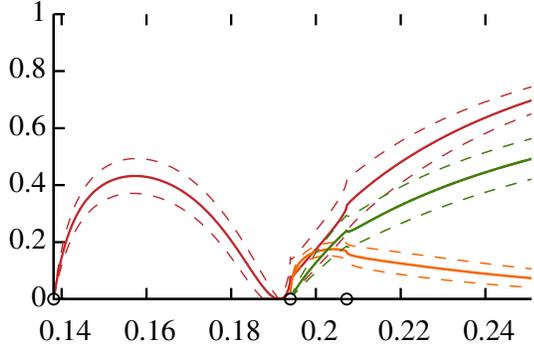
\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.16927 +/- 0.024819)  
+ (i/2)\*(-0.12975 +/- 0.03023) [ 0.46]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0357 +/- 0.0086	k_re= 0.0394 +/- 0.0097	k_re= 0.0591 +/- 0.0133
k_im= -0.0769 +/- 0.0130	k_im= -0.0696 +/- 0.0133	k_im= -0.0464 +/- 0.0114
corr= [ 0.51]	corr= [ 0.56]	corr= [ 0.60]
g = 0.0150 +/- 0.0134	g = 0.0661 +/- 0.0341	g = 0.1263 +/- 0.0175
arg(g)/pi= 0.3320 +/- 0.8678	arg(g)/pi= 0.7512 +/- 0.0560	arg(g)/pi= -0.3894 +/- 0.0795
g_re= 0.0076 +/- 0.0313	g_re= -0.0469 +/- 0.0200	g_re= 0.0430 +/- 0.0305
g_im= 0.0129 +/- 0.0295	g_im= 0.0466 +/- 0.0300	g_im= -0.1188 +/- 0.0193
corr= [-0.89]	corr= [-0.86]	corr= [ 0.34]

\*\*\*\*\*

# k\_sigma\_pole\_ssssss\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 48.27 / (57 - 10) = 1.03$

JPO+_g_eta:eta/1^S_0_pole0	-0.018558 +/- 0.0569	1.00	0.80	0.46	0.14	0.16	0.34	-0.13	0.24	0.29	0.04		
JPO+_g_kaon:kaon/1^S_0_pole0	0.050495 +/- 0.020008			1.00	0.17	-0.08	0.34	0.18	0.11	0.01	-0.04		
JPO+_g_pi:pi/1^S_0_pole0	0.098283 +/- 0.04665				1.00	0.04	-0.21	0.13	0.33	0.62	0.57		
JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order1	-0.27476 +/- 0.34043					1.00	-0.43	0.36	-0.30	-0.22	0.13		
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_order1	0.17088 +/- 0.19008						1.00	-0.48	-0.21	-0.11	-0.21		
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order1	0.80024 +/- 0.30087							1.00	-0.24	0.33	0.60		
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order1	-0.90483 +/- 0.24397								1.00	0.21	-0.10		
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order1	-1.1702 +/- 0.14678									1.00	0.45		
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order1	0.97940 +/- 0.31971										1.00		
JPO+_m_pole0	-5.1943e-05 +/- 0.098939											1.00	
JPO+_gamma_eta:eta/1^S_0 eta:eta/1^S_0_order0	0.0000 +/- 0												FIXED
JPO+_gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	0.0000 +/- 0												FIXED
JPO+_gamma_eta:eta/1^S_0 pi:pi/1^S_0_order0	0.0000 +/- 0												FIXED
JPO+_gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	0.0000 +/- 0												FIXED
JPO+_gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	0.0000 +/- 0												FIXED
JPO+_gamma_pi:pi/1^S_0 pi:pi/1^S_0_order0	0.0000 +/- 0												FIXED

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13108 \pm 0.0010987) + (i/2) * (3.0758e-13 \pm 9.2315e-11)$  [ 0.06]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0000 +/- 0.0000	k_im= 0.0803 +/- 0.0004	k_re= 0.0000 +/- 0.0000	k_im= 0.0715 +/- 0.0005	k_re= 0.0000 +/- 0.0000	k_im= 0.0218 +/- 0.0017
corr= [-0.06]		corr= [-0.06]		corr= [-0.06]	
g = 0.0305 +/- 0.0316	arg(g)/pi= 0.0000 +/- 0.0000	g = 0.0762 +/- 0.0224	arg(g)/pi= 1.0000 +/- 0.0000	g = 0.0895 +/- 0.0037	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.0305 +/- 0.0316	g_im= 0.0000 +/- 0.0000	g_re= -0.0762 +/- 0.0224	g_im= 0.0000 +/- 0.0000	g_re= -0.0895 +/- 0.0037	g_im= 0.0000 +/- 0.0000
corr= [-1.00]		corr= [-0.44]		corr= [-0.08]	

\*\*\*\*\*

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.19971 +/- 0.0040023)  
 + (i/2)\*(-0.032164 +/- 0.0039652) [ 0.16]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0221 +/- 0.0031	k_re= -0.0330 +/- 0.0042	k_re= 0.0725 +/- 0.0027
k_im= 0.0364 +/- 0.0043	k_im= 0.0243 +/- 0.0035	k_im= -0.0111 +/- 0.0014
corr= [ 0.56]	corr= [ 0.61]	corr= [ 0.26]
g = 0.0803 +/- 0.0205	g = 0.1366 +/- 0.0120	g = 0.1037 +/- 0.0062
arg(g)/pi= 0.1028 +/- 0.0722	arg(g)/pi= -0.8187 +/- 0.0240	arg(g)/pi= -0.3996 +/- 0.0267
g_re= 0.0762 +/- 0.0208	g_re= -0.1150 +/- 0.0111	g_re= 0.0321 +/- 0.0091
g_im= 0.0255 +/- 0.0179	g_im= -0.0736 +/- 0.0113	g_im= -0.0985 +/- 0.0056
corr= [ 0.00]	corr= [ 0.17]	corr= [-0.06]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]  
 \*\*\* not found on all cfigs \*\*\*

sqrt(s)\_pole = (0.075263 +/- 0.048698)  
 + (i/2)\*(-6.9186e-15 +/- 3.6069e-15) [ 0.89]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= 0.0966 +/- 0.0094	k_im= -0.0894 +/- 0.0102	k_im= 0.0579 +/- 0.0157
corr= [ 0.77]	corr= [ 0.79]	corr= [ 0.89]
g = 0.1752 +/- 7.6306	g = 0.1380 +/- 7.7516	g = 0.1326 +/- 7.6726
arg(g)/pi= 0.2240 +/- 1.2998	arg(g)/pi= 0.3066 +/- 3.5641	arg(g)/pi= 0.3264 +/- 4.9909
g_re= 0.1336 +/- 5.3565	g_re= 0.0788 +/- 5.6948	g_re= 0.0688 +/- 5.7570
g_im= 0.1133 +/- 5.4814	g_im= 0.1133 +/- 5.4814	g_im= 0.1133 +/- 5.4814
corr= [ 1.00]	corr= [ 1.00]	corr= [ 1.00]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = ( 0.1214 +/- 0.027171)  
 + (i/2)\*(+8.8352e-15 +/- 3.622e-12) [-0.01]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000
k_im= -0.0840 +/- 0.0098	k_im= 0.0756 +/- 0.0109	k_im= 0.0329 +/- 0.0248
corr= [ 0.01]	corr= [ 0.01]	corr= [ 0.01]
g = 0.0290 +/- 0.0397	g = 0.0891 +/- 0.0252	g = 0.0831 +/- 0.0111
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.0290 +/- 0.0397	g_re= -0.0891 +/- 0.0252	g_re= -0.0831 +/- 0.0111
g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000
corr= [-0.99]	corr= [ 0.30]	corr= [-0.69]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.19326 +/- 0.01372)  
 + (i/2)\*(-0.062301 +/- 0.017268) [ 0.14]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0299 +/- 0.0086	k_re= -0.0369 +/- 0.0101	k_re= 0.0693 +/- 0.0091
k_im= -0.0504 +/- 0.0105	k_im= 0.0408 +/- 0.0103	k_im= -0.0217 +/- 0.0061
corr= [ 0.41]	corr= [ 0.45]	corr= [ 0.26]
g = 0.0749 +/- 0.0188	g = 0.1740 +/- 0.0109	g = 0.1225 +/- 0.0109
arg(g)/pi= 0.0150 +/- 0.1170	arg(g)/pi= -0.8702 +/- 0.0565	arg(g)/pi= -0.3938 +/- 0.0560
g_re= 0.0749 +/- 0.0192	g_re= -0.1598 +/- 0.0126	g_re= 0.0401 +/- 0.0211
g_im= 0.0035 +/- 0.0273	g_im= -0.0690 +/- 0.0302	g_im= -0.1157 +/- 0.0117
corr= [-0.32]	corr= [-0.57]	corr= [ 0.33]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.13495 +/- 0.015025)  
 + (i/2)\*(-0.12213 +/- 0.038736) [ 0.40]

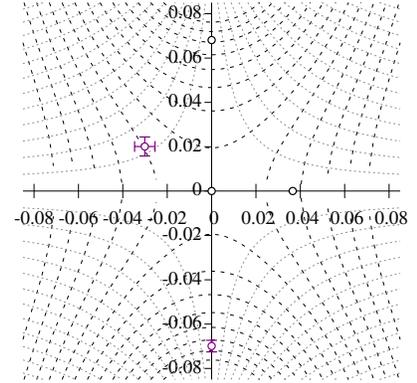
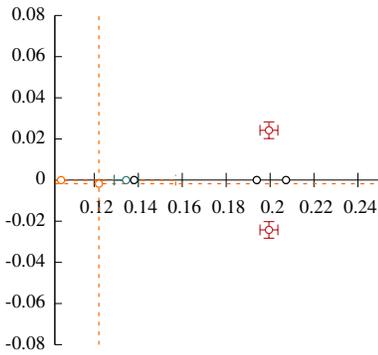
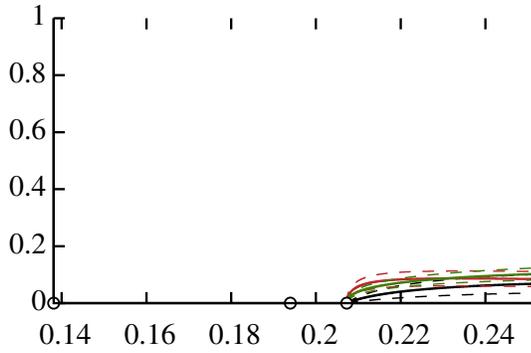
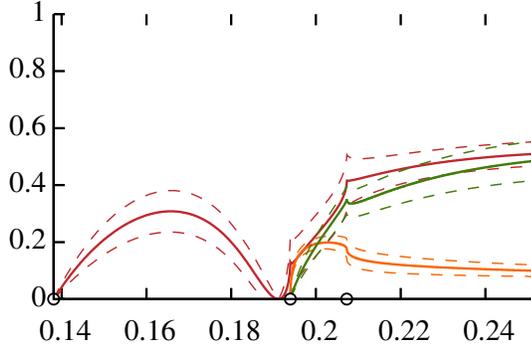
eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0235 +/- 0.0058	k_re= 0.0257 +/- 0.0061	k_re= 0.0396 +/- 0.0072
k_im= -0.0876 +/- 0.0082	k_im= -0.0803 +/- 0.0089	k_im= -0.0521 +/- 0.0118
corr= [-0.34]	corr= [-0.31]	corr= [ 0.00]
g = 0.0424 +/- 0.0169	g = 0.0488 +/- 0.0124	g = 0.1364 +/- 0.0214
arg(g)/pi= -0.3335 +/- 0.1118	arg(g)/pi= 0.7119 +/- 0.1310	arg(g)/pi= -0.4506 +/- 0.0312
g_re= 0.0212 +/- 0.0140	g_re= -0.0302 +/- 0.0133	g_re= 0.0211 +/- 0.0131
g_im= -0.0367 +/- 0.0177	g_im= 0.0384 +/- 0.0196	g_im= -0.1348 +/- 0.0216

```
corr= [-0.01]      |      corr= [ 0.59]      |      corr= [ 0.01]      |
```

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*****
```

$$0.17 < a_t E_{\text{cm}} < 0.24$$

# k\_inv\_poly\_cccccc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 36.20 / (41 - 6) = 1.03$

JP0+_c_eta:eta/1^S_0 eta:eta/1^S_0_order0	-1.7000 +/- 0.55932	1.00	0.87	-0.58	0.47	-0.26	-0.03
JP0+_c_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	-1.0123 +/- 0.32672	1.00	-0.63	0.84	-0.57	0.13	
JP0+_c_eta:eta/1^S_0 pi:pi/1^S_0_order0	0.88559 +/- 0.23628		1.00	-0.50	0.81	-0.77	
JP0+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	-0.89337 +/- 0.27262			1.00	-0.75	0.25	
JP0+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	0.14114 +/- 0.19283				1.00	-0.77	
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order0	-0.64404 +/- 0.20345					1.00	

## pole singularities

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

$\text{sqrt}(s)_{\text{pole}} = (0.19948 \pm 0.0040978) + (i/2)*(-0.024235 \pm 0.0040586) [0.34]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0178 +/- 0.0029	k_re= -0.0301 +/- 0.0046	k_re= 0.0722 +/- 0.0028
k_im= 0.0339 +/- 0.0052	k_im= 0.0201 +/- 0.0043	k_im= -0.0084 +/- 0.0015
corr= [ 0.48]	corr= [ 0.66]	corr= [ 0.41]
g = 0.1088 +/- 0.0169	g = 0.1519 +/- 0.0092	g = 0.0935 +/- 0.0079
arg(g)/pi= 0.0624 +/- 0.0310	arg(g)/pi= -0.7914 +/- 0.0331	arg(g)/pi= -0.3743 +/- 0.0355
g_re= 0.1067 +/- 0.0170	g_re= -0.1205 +/- 0.0139	g_re= 0.0360 +/- 0.0118
g_im= 0.0212 +/- 0.0105	g_im= -0.0926 +/- 0.0119	g_im= -0.0864 +/- 0.0057
corr= [ 0.07]	corr= [-0.56]	corr= [-0.31]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

$\text{sqrt}(s)_{\text{pole}} = (0.13446 \pm 0.0054616) + (i/2)*(-1.1716e-13 \pm 3.4956e-11) [-0.02]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000

```

k_im= 0.0789 +/- 0.0023 | k_im= -0.0699 +/- 0.0026 | k_im= -0.0158 +/- 0.0116 |
corr= [ 0.02] | corr= [ 0.02] | corr= [ 0.01] |
=====
|g|= 0.0847 +/- 0.0516 | |g|= 0.0303 +/- 0.0110 | |g|= 0.0774 +/- 0.0169 |
arg(g)/pi= 0.5000 +/- 0.0000 |arg(g)/pi= -0.5000 +/- 0.0000 |arg(g)/pi= 0.5000 +/- 0.0000 |
-----
g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 | g_re= -0.0000 +/- 0.0000 |
g_im= 0.0847 +/- 0.0516 | g_im= -0.0303 +/- 0.0110 | g_im= 0.0774 +/- 0.0169 |
corr= [-1.00] | corr= [ 0.93] | corr= [ 0.98] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0[-] kaon:kaon/1^S_0[+] pi:pi/1^S_0[+]

```

```

sqrt(s)_pole = (0.12207 +/- 0.13575)
+ (i/2)*(-0.0017416 +/- 0.23134) [ 0.50]

```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0002 +/- 0.0272 | k_re= -0.0002 +/- 0.0294 | k_re= -0.0003 +/- 0.0434 |
k_im= -0.0837 +/- 0.0519 | k_im= 0.0753 +/- 0.0576 | k_im= 0.0315 +/- 0.1305 |
corr= [-0.59] | corr= [-0.59] | corr= [-0.51] |
-----
|g|= 0.1244 +/- 0.9511 | |g|= 0.2336 +/- 1.3635 | |g|= 0.2617 +/- 1.6995 |
arg(g)/pi= 0.0112 +/- 2.4950 |arg(g)/pi= -0.9997 +/- 1.5040 |arg(g)/pi= 0.0074 +/- 1.2790 |
-----
g_re= 0.1243 +/- 0.9192 | g_re= -0.2336 +/- 1.3627 | g_re= 0.2617 +/- 1.6947 |
g_im= 0.0044 +/- 1.0050 | g_im= -0.0002 +/- 1.1049 | g_im= 0.0061 +/- 1.0593 |
corr= [ 0.92] | corr= [ 0.81] | corr= [ 0.21] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0[-] kaon:kaon/1^S_0[+] pi:pi/1^S_0[+]

```

```

sqrt(s)_pole = (0.10521 +/- 0.12223)
+ (i/2)*(-0.099038 +/- 0.15227) [ 0.11]

```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0139 +/- 0.0272 | k_re= -0.0151 +/- 0.0297 | k_re= -0.0233 +/- 0.0482 |
k_im= -0.0937 +/- 0.0352 | k_im= 0.0864 +/- 0.0377 | k_im= 0.0561 +/- 0.0498 |
corr= [ 0.40] | corr= [ 0.41] | corr= [ 0.45] |
-----
|g|= 0.1080 +/- 0.2669 | |g|= 0.3372 +/- 0.2764 | |g|= 0.2750 +/- 0.3593 |
arg(g)/pi= 0.2961 +/- 0.4129 |arg(g)/pi= -0.7461 +/- 0.1699 |arg(g)/pi= 0.7010 +/- 0.6728 |
-----
g_re= 0.0646 +/- 0.2136 | g_re= -0.2355 +/- 0.2503 | g_re= -0.1623 +/- 0.4030 |
g_im= 0.0866 +/- 0.2127 | g_im= -0.2413 +/- 0.2148 | g_im= 0.2220 +/- 0.5518 |
corr= [ 0.59] | corr= [ 0.41] | corr= [ 0.59] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0[-] kaon:kaon/1^S_0[-] pi:pi/1^S_0[+]

```

```

sqrt(s)_pole = ( 0.1048 +/- 0.052226)
+ (i/2)*(-1.3794e-13 +/- 2.5358e-11) [ 0.04]

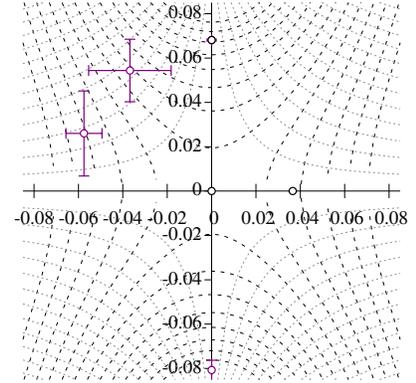
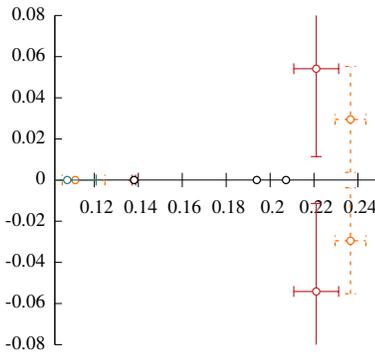
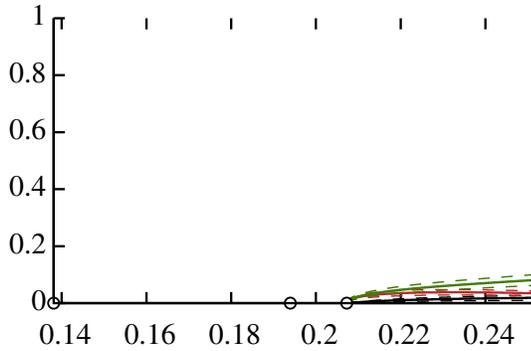
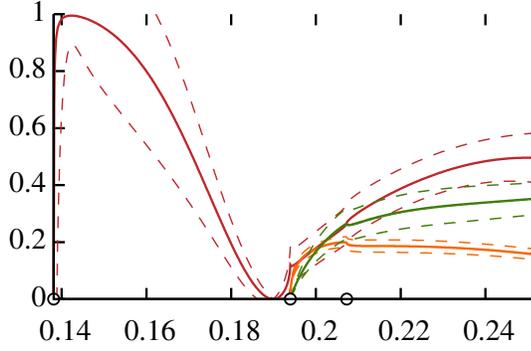
```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= -0.0894 +/- 0.0152 | k_im= -0.0816 +/- 0.0167 | k_im= 0.0449 +/- 0.0303 |
corr= [-0.03] | corr= [-0.03] | corr= [-0.03] |
-----
|g|= 0.0543 +/- 0.0326 | |g|= 0.0048 +/- 0.0169 | |g|= 0.2732 +/- 0.2677 |
arg(g)/pi= 0.0000 +/- 0.0000 |arg(g)/pi= 1.0000 +/- 0.0000 |arg(g)/pi= -0.0000 +/- 0.0000 |
-----
g_re= 0.0543 +/- 0.0326 | g_re= -0.0048 +/- 0.0169 | g_re= 0.2732 +/- 0.2677 |
g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [-0.99] | corr= [ 0.58] |
*****

```

# k\_inv\_poly\_lcccc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 25.66 / (41 - 7) = 0.75$

JPO+_c_eta:eta/1^S_0 eta:eta/1^S_0_order0	-5.6765 +/- 1.0063	1.00	0.67	0.10	-0.17	0.18	-0.03	-0.03
JPO+_c_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	-2.7037 +/- 0.31246	1.00	0.01	0.61	0.00	-0.03	0.01	
JPO+_c_eta:eta/1^S_0 pi:pi/1^S_0_order0	0.66572 +/- 0.54581		1.00	-0.09	0.97	-0.25	-0.01	
JPO+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	-1.5459 +/- 0.24186			1.00	-0.20	0.00	0.03	
JPO+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	-0.17490 +/- 0.28524				1.00	-0.32	0.08	
JPO+_c_pi:pi/1^S_0 pi:pi/1^S_0_order0	1.3706 +/- 0.47352					1.00	-0.96	
JPO+_c_pi:pi/1^S_0 pi:pi/1^S_0_order1	-1.3503 +/- 0.37159						1.00	

## pole singularities

\*\*\*\*\*

\*\*\*\*\*

JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

\*\*\* not found on all cfgs \*\*\*

$\text{sqrt}(s)_{\text{pole}} = (0.13802 \pm 0.0008813) + (i/2) * (-2.7085e-12 \pm 6.0999e-09) [-0.01]$

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= -0.0000 +/- 0.0000	k_im= 0.0773 +/- 0.0004	k_re= -0.0000 +/- 0.0000	k_im= 0.0681 +/- 0.0004	k_re= 0.0000 +/- 0.0000	k_im= -0.0025 +/- 0.0110
corr= [ 0.01]		corr= [ 0.01]		corr= [ 0.03]	
g = 0.5195 +/- 11.5999	arg(g)/pi= 0.2563 +/- 0.2233	g = 0.4860 +/- 12.0163	arg(g)/pi= 0.2345 +/- 0.5888	g = 0.4927 +/- 11.9406	arg(g)/pi= 0.2392 +/- 0.4040
g_re= 0.3600 +/- 8.3000	g_im= 0.3745 +/- 8.1118	g_re= 0.3600 +/- 8.3000	g_im= 0.3265 +/- 8.7355	g_re= 0.3600 +/- 8.3000	g_im= 0.3364 +/- 8.6069
corr= [ 1.00]		corr= [ 1.00]		corr= [ 1.00]	

\*\*\*\*\*

\*\*\*\*\*

JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

$\text{sqrt}(s)_{\text{pole}} = (0.18197 \pm 0.026458) + (i/2) * (-0.087914 \pm 0.038523) [-0.25]$

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= -0.0318 +/- 0.0168 | k_re= -0.0368 +/- 0.0186 | k_re= 0.0634 +/- 0.0180 |
k_im= 0.0629 +/- 0.0138 | k_im= 0.0544 +/- 0.0141 | k_im= -0.0315 +/- 0.0120 |
corr= [ 0.35] | corr= [ 0.30] | corr= [-0.09] |
-----|-----|-----|
|g|= 0.1255 +/- 0.0517 | |g|= 0.2813 +/- 0.1040 | |g|= 0.2166 +/- 0.1154 |
arg(g)/pi= -0.0052 +/- 0.0875 | arg(g)/pi= -0.9715 +/- 0.0687 | arg(g)/pi= -0.7570 +/- 0.1276 |
-----|-----|-----|
g_re= 0.1254 +/- 0.0518 | g_re= -0.2801 +/- 0.1029 | g_re= -0.1565 +/- 0.0681 |
g_im= -0.0021 +/- 0.0344 | g_im= -0.0251 +/- 0.0626 | g_im= -0.1497 +/- 0.1273 |
corr= [ 0.05] | corr= [ 0.25] | corr= [ 0.36] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0[+] kaon:kaon/1^S_0[+] pi:pi/1^S_0[-]
sqrt(s)_pole = (0.22101 +/- 0.010224)
+ (i/2)*(-0.054117 +/- 0.042711) [ 0.40]

```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= -0.0477 +/- 0.0099 | k_re= -0.0575 +/- 0.0081 | k_re= 0.0869 +/- 0.0061 |
k_im= 0.0314 +/- 0.0208 | k_im= 0.0260 +/- 0.0192 | k_im= -0.0172 +/- 0.0136 |
corr= [-0.40] | corr= [-0.14] | corr= [ 0.29] |
-----|-----|-----|
|g|= 0.1045 +/- 0.0607 | |g|= 0.2198 +/- 0.1369 | |g|= 0.2169 +/- 0.1353 |
arg(g)/pi= 0.4266 +/- 0.1348 | arg(g)/pi= -0.5143 +/- 0.1278 | arg(g)/pi= -0.1279 +/- 0.0951 |
-----|-----|-----|
g_re= 0.0239 +/- 0.0414 | g_re= -0.0099 +/- 0.0863 | g_re= 0.1996 +/- 0.1218 |
g_im= 0.1017 +/- 0.0627 | g_im= -0.2196 +/- 0.1382 | g_im= -0.0848 +/- 0.0876 |
corr= [-0.11] | corr= [-0.31] | corr= [-0.60] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0[+] kaon:kaon/1^S_0[-] pi:pi/1^S_0[-]
sqrt(s)_pole = (0.10763 +/- 0.01316)
+ (i/2)*(+1.3579e-12 +/- 4.0552e-10) [ 0.00]

```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= 0.0886 +/- 0.0040 | k_im= -0.0807 +/- 0.0044 | k_im= -0.0433 +/- 0.0082 |
corr= [-0.00] | corr= [-0.00] | corr= [-0.00] |
-----|-----|-----|
|g|= 0.0214 +/- 0.0109 | |g|= 0.0185 +/- 0.0051 | |g|= 0.0893 +/- 0.0103 |
arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 | arg(g)/pi= 0.5000 +/- 0.0000 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 | g_re= -0.0000 +/- 0.0000 |
g_im= 0.0214 +/- 0.0109 | g_im= -0.0185 +/- 0.0051 | g_im= 0.0893 +/- 0.0103 |
corr= [-1.00] | corr= [ 0.07] | corr= [ 0.06] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0[-] kaon:kaon/1^S_0[+] pi:pi/1^S_0[+]
sqrt(s)_pole = ( 0.1434 +/- 0.021454)
+ (i/2)*(-0.14308 +/- 0.033768) [-0.81]

```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= 0.0292 +/- 0.0112 | k_re= -0.0317 +/- 0.0120 | k_re= -0.0464 +/- 0.0141 |
k_im= -0.0879 +/- 0.0038 | k_im= 0.0809 +/- 0.0039 | k_im= 0.0553 +/- 0.0055 |
corr= [ 0.39] | corr= [ 0.26] | corr= [-0.54] |
-----|-----|-----|
|g|= 0.1084 +/- 0.0218 | |g|= 0.2890 +/- 0.0122 | |g|= 0.0691 +/- 0.0113 |
arg(g)/pi= 0.1944 +/- 0.0267 | arg(g)/pi= -0.7489 +/- 0.0233 | arg(g)/pi= -0.9825 +/- 0.0513 |
-----|-----|-----|
g_re= 0.0888 +/- 0.0159 | g_re= -0.2037 +/- 0.0149 | g_re= -0.0690 +/- 0.0111 |
g_im= 0.0622 +/- 0.0175 | g_im= -0.2051 +/- 0.0194 | g_im= -0.0038 +/- 0.0114 |
corr= [ 0.79] | corr= [-0.52] | corr= [ 0.36] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0[-] kaon:kaon/1^S_0[+] pi:pi/1^S_0[-]
sqrt(s)_pole = (0.087565 +/- 0.017808)
+ (i/2)*(+1.5811e-15 +/- 2.1212e-12) [-0.04]

```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
-----|-----|-----|
k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= -0.0939 +/- 0.0042 | k_im= 0.0865 +/- 0.0045 | k_im= -0.0534 +/- 0.0073 |
corr= [ 0.04] | corr= [ 0.04] | corr= [ 0.04] |
-----|-----|-----|
|g|= 0.0367 +/- 0.0112 | |g|= 0.1136 +/- 0.0347 | |g|= 0.0546 +/- 0.0203 |
arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 | arg(g)/pi= 0.5000 +/- 0.0000 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 | g_re= -0.0000 +/- 0.0000 |
g_im= 0.0367 +/- 0.0112 | g_im= -0.1136 +/- 0.0347 | g_im= 0.0546 +/- 0.0203 |
corr= [-1.00] | corr= [ 0.12] | corr= [-0.23] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0[-] kaon:kaon/1^S_0[+] pi:pi/1^S_0[-]

```

```

sqrt(s)_pole = ( 0.2366 +/- 0.0070153)
               + (i/2)*(-0.029473 +/- 0.025749) [-0.44]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0585 +/- 0.0081 | k_re= -0.0685 +/- 0.0066 | k_re= 0.0962 +/- 0.0044 |
k_im= -0.0149 +/- 0.0119 | k_im= 0.0127 +/- 0.0106 | k_im= -0.0091 +/- 0.0078 |
corr= [-0.58] | corr= [-0.54] | corr= [-0.47] |
=====
|g|= 0.0965 +/- 0.0201 | |g|= 0.2005 +/- 0.0338 | |g|= 0.1569 +/- 0.0296 |
arg(g)/pi= 0.3693 +/- 0.0475 | arg(g)/pi= -0.5370 +/- 0.0211 | arg(g)/pi= -0.0630 +/- 0.0310 |
=====
g_re= 0.0385 +/- 0.0170 | g_re= -0.0232 +/- 0.0118 | g_re= 0.1538 +/- 0.0269 |
g_im= 0.0885 +/- 0.0180 | g_im= -0.1992 +/- 0.0343 | g_im= -0.0308 +/- 0.0196 |
corr= [ 0.39] | corr= [-0.25] | corr= [-0.81] |
=====

```

```

*****
JP=0+ || eta:eta/1^S_0[-] kaon:kaon/1^S_0[-] pi:pi/1^S_0[-]

```

```

sqrt(s)_pole = (0.24876 +/- 0.014798)
               + (i/2)*(-0.14945 +/- 0.036142) [-0.89]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0813 +/- 0.0126 | k_re= 0.0868 +/- 0.0118 | k_re= 0.1060 +/- 0.0093 |
k_im= -0.0572 +/- 0.0086 | k_im= -0.0535 +/- 0.0090 | k_im= -0.0439 +/- 0.0094 |
corr= [-0.88] | corr= [-0.89] | corr= [-0.90] |
=====
|g|= 0.0379 +/- 0.0082 | |g|= 0.0676 +/- 0.0074 | |g|= 0.1811 +/- 0.0256 |
arg(g)/pi= -0.3646 +/- 0.1125 | arg(g)/pi= 0.5063 +/- 0.0403 | arg(g)/pi= 0.0129 +/- 0.0095 |
=====
g_re= 0.0156 +/- 0.0150 | g_re= -0.0013 +/- 0.0086 | g_re= 0.1809 +/- 0.0254 |
g_im= -0.0345 +/- 0.0048 | g_im= 0.0676 +/- 0.0074 | g_im= 0.0073 +/- 0.0064 |
corr= [-0.18] | corr= [-0.14] | corr= [ 0.99] |
=====

```

```

*****
JP=0+ || eta:eta/1^S_0[-] kaon:kaon/1^S_0[-] pi:pi/1^S_0[-]

```

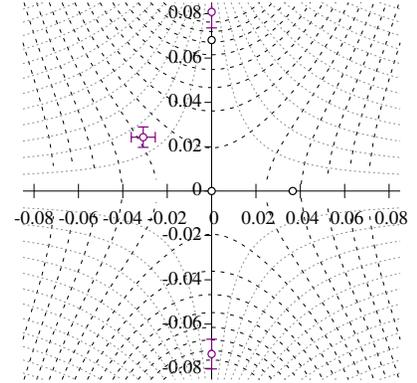
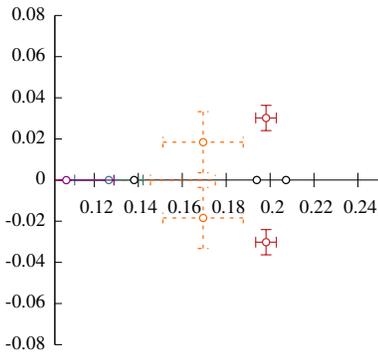
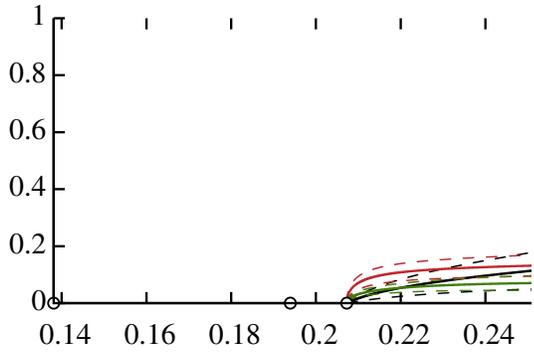
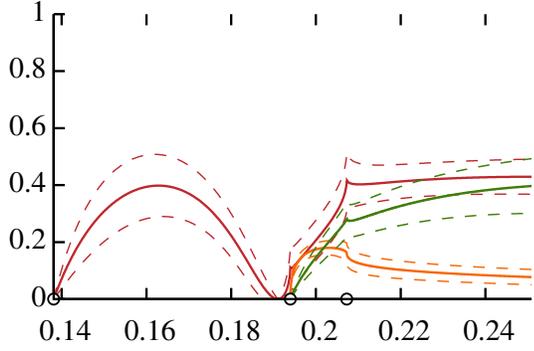
```

sqrt(s)_pole = (0.11127 +/- 0.01355)
               + (i/2)*(+1.2764e-16 +/- 1.9057e-13) [-0.02]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= -0.0874 +/- 0.0043 | k_im= -0.0794 +/- 0.0047 | k_im= -0.0409 +/- 0.0092 |
corr= [ 0.02] | corr= [ 0.02] | corr= [ 0.02] |
=====
|g|= 0.0116 +/- 0.0063 | |g|= 0.0124 +/- 0.0045 | |g|= 0.0936 +/- 0.0093 |
arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 | arg(g)/pi= 0.5000 +/- 0.0000 |
=====
g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 | g_re= -0.0000 +/- 0.0000 |
g_im= 0.0116 +/- 0.0063 | g_im= -0.0124 +/- 0.0045 | g_im= 0.0936 +/- 0.0093 |
corr= [-1.00] | corr= [-0.51] | corr= [ 0.46] |
=====

```

# k\_inv\_poly\_ccclcc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 31.51 / (41 - 7) = 0.93$

JPO+_c_eta:eta/1^S_0 eta:eta/1^S_0_order0	-1.2344 +/- 0.51916	1.00	0.92	-0.73	0.57	-0.36	-0.43	0.14
JPO+_c_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	-0.71450 +/- 0.30775	1.00	-0.74	0.74	-0.41	-0.62	0.24	
JPO+_c_eta:eta/1^S_0 pi:pi/1^S_0_order0	0.75249 +/- 0.23366		1.00	-0.51	0.28	0.81	-0.74	
JPO+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	-0.27993 +/- 0.4113			1.00	-0.86	-0.69	0.20	
JPO+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order1	-0.44568 +/- 0.27612				1.00	0.40	-0.03	
JPO+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	0.025023 +/- 0.1857					1.00	-0.75	
JPO+_c_pi:pi/1^S_0 pi:pi/1^S_0_order0	-0.63911 +/- 0.18992						1.00	

## pole singularities

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.10724 +/- 0.021684)  
+ (i/2)\*(-2.2301e-13 +/- 6.1251e-11) [ 0.04]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= 0.0887 +/- 0.0066	k_im= 0.0808 +/- 0.0072	k_im= 0.0435 +/- 0.0134
corr= [-0.04]	corr= [-0.04]	corr= [-0.04]
g = 0.0345 +/- 0.0371	g = 0.1408 +/- 0.0317	g = 0.1640 +/- 0.0374
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= -0.0000 +/- 0.0000	arg(g)/pi= -0.0000 +/- 0.0000
g_re= 0.0345 +/- 0.0371	g_re= 0.1408 +/- 0.0317	g_re= 0.1640 +/- 0.0374
g_im= 0.0000 +/- 0.0000	g_im= -0.0000 +/- 0.0000	g_im= -0.0000 +/- 0.0000
corr= [-1.00]	corr= [-0.65]	corr= [-0.81]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.19817 +/- 0.0047054)  
+ (i/2)\*(-0.030188 +/- 0.0061231) [-0.01]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
---------------	-----------------	-------------

k_re= -0.0201 +/- 0.0043	k_re= -0.0308 +/- 0.0054	k_re= 0.0714 +/- 0.0032
k_im= 0.0372 +/- 0.0050	k_im= 0.0243 +/- 0.0046	k_im= -0.0105 +/- 0.0021
corr= [ 0.38]	corr= [ 0.38]	corr= [ 0.05]
-----		
g = 0.1194 +/- 0.0250	g = 0.1471 +/- 0.0113	g = 0.1024 +/- 0.0136
arg(g)/pi= -0.0147 +/- 0.0626	arg(g)/pi= -0.8288 +/- 0.0383	arg(g)/pi= -0.4176 +/- 0.0431
-----		
g_re= 0.1193 +/- 0.0249	g_re= -0.1263 +/- 0.0121	g_re= 0.0262 +/- 0.0144
g_im= -0.0055 +/- 0.0236	g_im= -0.0753 +/- 0.0172	g_im= -0.0990 +/- 0.0131
corr= [-0.10]	corr= [-0.31]	corr= [-0.13]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = ( 0.1266 +/- 0.015579)  
+ (i/2)\*(+2.2083e-13 +/- 4.5357e-11) [ 0.02]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= 0.0821 +/- 0.0060	k_im= -0.0735 +/- 0.0067	k_im= -0.0276 +/- 0.0178			
corr= [-0.02]	corr= [-0.02]	corr= [-0.02]	corr= [-0.02]	corr= [-0.02]	corr= [-0.02]
-----					
g = 0.1376 +/- 0.0850	g = 0.0424 +/- 0.0101	g = 0.0861 +/- 0.0045			
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000	arg(g)/pi= 0.5000 +/- 0.0000			
-----					
g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000
g_im= 0.1376 +/- 0.0850	g_im= -0.0424 +/- 0.0101	g_im= 0.0861 +/- 0.0045			
corr= [-1.00]	corr= [ 0.78]	corr= [ 0.88]	corr= [ 0.88]	corr= [ 0.88]	corr= [ 0.88]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.08099 +/- 0.064535)  
+ (i/2)\*(+9.9221e-11 +/- 2.952e-08) [ 0.03]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= -0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000
k_im= -0.0954 +/- 0.0135	k_im= 0.0881 +/- 0.0146	k_im= 0.0559 +/- 0.0230			
corr= [-0.03]	corr= [-0.03]	corr= [-0.03]	corr= [-0.03]	corr= [-0.03]	corr= [-0.03]
-----					
g = 0.0330 +/- 0.0489	g = 0.0671 +/- 0.0989	g = 0.2993 +/- 0.3885			
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= -0.0000 +/- 0.0000				
-----					
g_re= 0.0330 +/- 0.0489	g_re= 0.0671 +/- 0.0989	g_re= 0.2993 +/- 0.3885			
g_im= 0.0000 +/- 0.0000	g_im= -0.0000 +/- 0.0000				
corr= [-0.99]	corr= [-0.97]	corr= [ 0.82]	corr= [ 0.82]	corr= [ 0.82]	corr= [ 0.82]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = ( 0.1695 +/- 0.018299)  
+ (i/2)\*(-0.018407 +/- 0.014859) [-0.30]

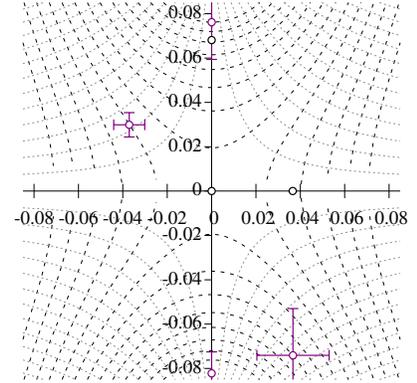
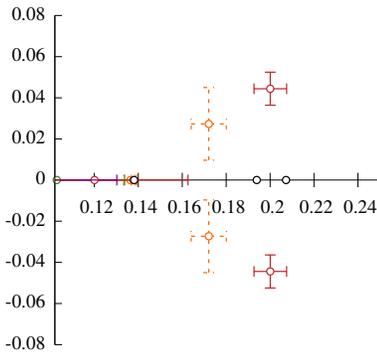
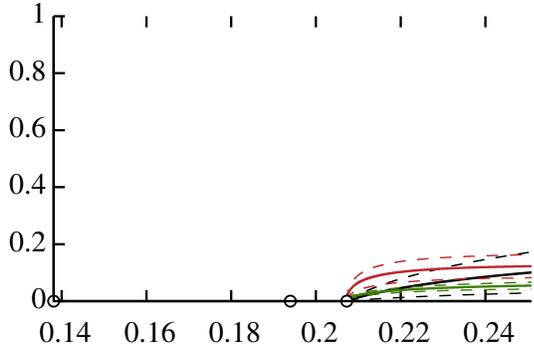
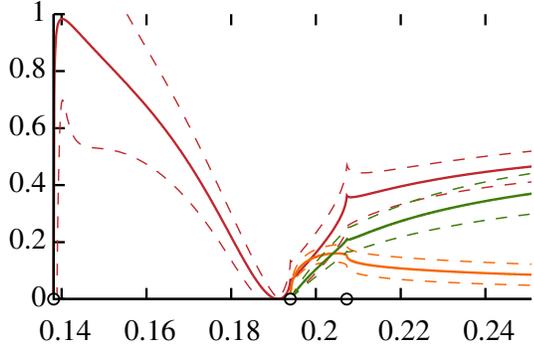
eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0065 +/- 0.0061	k_re= -0.0081 +/- 0.0081	k_re= 0.0495 +/- 0.0156			
k_im= -0.0602 +/- 0.0124	k_im= 0.0481 +/- 0.0152	k_im= -0.0079 +/- 0.0060			
corr= [ 0.54]	corr= [ 0.60]	corr= [-0.09]	corr= [-0.09]	corr= [-0.09]	corr= [-0.09]
-----					
g = 0.0729 +/- 0.0261	g = 0.2041 +/- 0.0663	g = 0.0634 +/- 0.0203			
arg(g)/pi= -0.1257 +/- 0.0402	arg(g)/pi= 0.9957 +/- 0.0344	arg(g)/pi= -0.4436 +/- 0.0669			
-----					
g_re= 0.0673 +/- 0.0266	g_re= -0.2041 +/- 0.0660	g_re= 0.0112 +/- 0.0114			
g_im= -0.0281 +/- 0.0075	g_im= 0.0028 +/- 0.0228	g_im= -0.0624 +/- 0.0214			
corr= [-0.48]	corr= [-0.78]	corr= [ 0.44]	corr= [ 0.44]	corr= [ 0.44]	corr= [ 0.44]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.09367 +/- 0.081374)  
+ (i/2)\*(-9.1583e-12 +/- 2.7695e-09) [-0.02]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000			
k_im= -0.0924 +/- 0.0203	k_im= -0.0849 +/- 0.0221	k_im= 0.0507 +/- 0.0369			
corr= [ 0.02]	corr= [ 0.02]	corr= [ 0.01]	corr= [ 0.01]	corr= [ 0.01]	corr= [ 0.01]
-----					
g = 0.0534 +/- 0.0301	g = 0.0088 +/- 0.0206	g = 0.3185 +/- 0.4363			
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000	arg(g)/pi= -0.0000 +/- 0.0000			
-----					
g_re= 0.0534 +/- 0.0301	g_re= -0.0088 +/- 0.0206	g_re= 0.3185 +/- 0.4363			
g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_im= -0.0000 +/- 0.0000			
corr= [-1.00]	corr= [-0.98]	corr= [-0.57]	corr= [-0.57]	corr= [-0.57]	corr= [-0.57]

# k\_inv\_poly\_cccccc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 28.50 / (41 - 6) = 0.81$

JP0+_c_eta:eta/1^S_0 eta:eta/1^S_0_order0	-1.2139 +/- 0.64711	1.00	0.95	-0.79	0.68	-0.58	0.46
JP0+_c_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	-0.65140 +/- 0.36375	1.00	-0.81	0.85	-0.67	0.53	
JP0+_c_eta:eta/1^S_0 pi:pi/1^S_0_order0	0.72605 +/- 0.3459		1.00	-0.67	0.91	-0.88	
JP0+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	-0.71086 +/- 0.22906			1.00	-0.74	0.53	
JP0+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	-0.083643 +/- 0.22939				1.00	-0.91	
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order0	-0.11888 +/- 0.25689					1.00	

## pole singularities

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.091402 \pm 0.038816) + (i/2) * (2.183e-17 \pm 6.5277e-15) [-0.02]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000
k_im= 0.0930 +/- 0.0096	k_im= 0.0855 +/- 0.0104	k_im= 0.0518 +/- 0.0173
corr= [ 0.02]	corr= [ 0.02]	corr= [ 0.02]
g = 0.0641 +/- 0.0370	g = 0.0328 +/- 0.0172	g = 0.0431 +/- 0.0300
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= -0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.0641 +/- 0.0370	g_re= 0.0328 +/- 0.0172	g_re= -0.0431 +/- 0.0300
g_im= 0.0000 +/- 0.0000	g_im= -0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000
corr= [-1.00]	corr= [ 0.64]	corr= [ 0.28]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

$\text{sqrt}(s)_{\text{pole}} = (0.2001 \pm 0.0074284) + (i/2) * (-0.044409 \pm 0.0080406) [-0.02]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0276 +/- 0.0060	k_re= -0.0371 +/- 0.0070	k_re= 0.0731 +/- 0.0050

```

k_im= 0.0402 +/- 0.0064 | k_im= 0.0299 +/- 0.0055 | k_im= -0.0152 +/- 0.0027 |
corr= [ 0.55] | corr= [ 0.51] | corr= [ 0.10] |
=====|=====|=====|
|g|= 0.1298 +/- 0.0286 | |g|= 0.1464 +/- 0.0240 | |g|= 0.1372 +/- 0.0197 |
arg(g)/pi= -0.0202 +/- 0.0641 | arg(g)/pi= -0.8306 +/- 0.0523 | arg(g)/pi= -0.4198 +/- 0.0586 |
-----|-----|-----|
g_re= 0.1295 +/- 0.0289 | g_re= -0.1262 +/- 0.0259 | g_re= 0.0342 +/- 0.0267 |
g_im= -0.0082 +/- 0.0258 | g_im= -0.0743 +/- 0.0221 | g_im= -0.1328 +/- 0.0177 |
corr= [ 0.20] | corr= [-0.09] | corr= [-0.23] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0+| kaon:kaon/1^S_0+| pi:pi/1^S_0-|

```

```

sqrt(s)_pole = (0.12003 +/- 0.04258)
+ (i/2)*(+5.0073e-13 +/- 1.4874e-10) [-0.01]

```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====|=====|=====|
k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= 0.0845 +/- 0.0152 | k_im= 0.0762 +/- 0.0168 | k_im= -0.0341 +/- 0.0380 |
corr= [ 0.01] | corr= [ 0.01] | corr= [ 0.01] |
-----|-----|-----|
|g|= 0.0881 +/- 0.0370 | |g|= 0.1149 +/- 0.1312 | |g|= 0.0794 +/- 0.1033 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 |
-----|-----|-----|
g_re= 0.0881 +/- 0.0370 | g_re= 0.1149 +/- 0.1312 | g_re= 0.0794 +/- 0.1033 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [-0.75] | corr= [-0.85] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0+| kaon:kaon/1^S_0-| pi:pi/1^S_0+|

```

```

sqrt(s)_pole = (0.10286 +/- 0.030912)
+ (i/2)*(+1.9012e-17 +/- 5.6753e-15) [-0.01]

```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====|=====|=====|
k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= 0.0900 +/- 0.0089 | k_im= -0.0822 +/- 0.0097 | k_im= 0.0461 +/- 0.0174 |
corr= [ 0.01] | corr= [ 0.01] | corr= [ 0.01] |
-----|-----|-----|
|g|= 0.0723 +/- 0.0215 | |g|= 0.0179 +/- 0.0079 | |g|= 0.0695 +/- 0.0276 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 |
-----|-----|-----|
g_re= 0.0723 +/- 0.0215 | g_re= -0.0179 +/- 0.0079 | g_re= -0.0695 +/- 0.0276 |
g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [-0.80] | corr= [ 0.06] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0+| kaon:kaon/1^S_0-| pi:pi/1^S_0-|

```

```

sqrt(s)_pole = (0.16013 +/- 0.039504)
+ (i/2)*(-0.13598 +/- 0.063728) [ 0.29]

```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====|=====|=====|
k_re= -0.0335 +/- 0.0150 | k_re= 0.0367 +/- 0.0163 | k_re= 0.0546 +/- 0.0210 |
k_im= 0.0813 +/- 0.0202 | k_im= -0.0741 +/- 0.0211 | k_im= -0.0499 +/- 0.0213 |
corr= [ 0.22] | corr= [ 0.26] | corr= [ 0.36] |
-----|-----|-----|
|g|= 0.1802 +/- 0.0585 | |g|= 0.0815 +/- 0.0274 | |g|= 0.1523 +/- 0.0482 |
arg(g)/pi= -0.1707 +/- 0.1629 | arg(g)/pi= 0.6411 +/- 0.1184 | arg(g)/pi= -0.5317 +/- 0.0788 |
-----|-----|-----|
g_re= 0.1549 +/- 0.0737 | g_re= -0.0349 +/- 0.0279 | g_re= -0.0151 +/- 0.0362 |
g_im= -0.0921 +/- 0.0806 | g_im= 0.0736 +/- 0.0299 | g_im= -0.1516 +/- 0.0494 |
corr= [ 0.44] | corr= [ 0.19] | corr= [-0.28] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0-| kaon:kaon/1^S_0+| pi:pi/1^S_0+|

```

```

sqrt(s)_pole = (0.13778 +/- 0.00090723)
+ (i/2)*(-5.7589e-12 +/- 1.6864e-09) [-0.05]

```

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====|=====|=====|
k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= -0.0774 +/- 0.0004 | k_im= 0.0683 +/- 0.0005 | k_im= 0.0049 +/- 0.0064 |
corr= [ 0.05] | corr= [ 0.05] | corr= [ 0.05] |
-----|-----|-----|
|g|= 0.0069 +/- 0.0067 | |g|= 0.0312 +/- 0.0262 | |g|= 0.0503 +/- 0.0308 |
arg(g)/pi= 0.0000 +/- 0.0001 | arg(g)/pi= -0.0000 +/- 0.0001 | arg(g)/pi= -0.0000 +/- 0.0001 |
-----|-----|-----|
g_re= 0.0069 +/- 0.0067 | g_re= 0.0312 +/- 0.0262 | g_re= 0.0503 +/- 0.0308 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [-0.52] | corr= [-0.13] |
*****

```

```

*****
JP=0+ || eta:eta/1^S_0-| kaon:kaon/1^S_0+| pi:pi/1^S_0-|

```

```

sqrt(s)_pole = (0.17208 +/- 0.0080123)
+ (i/2)*(-0.027313 +/- 0.01764) [-0.31]

```

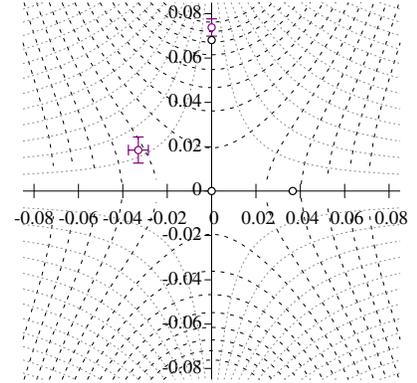
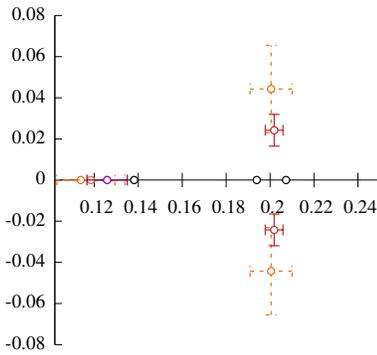
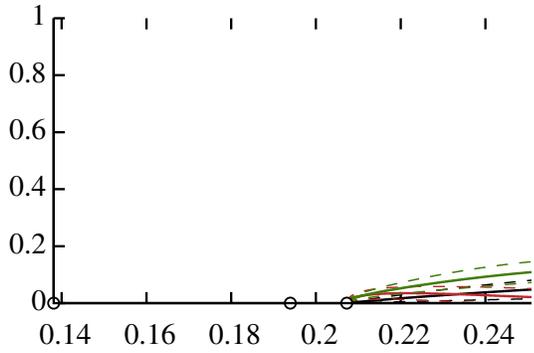
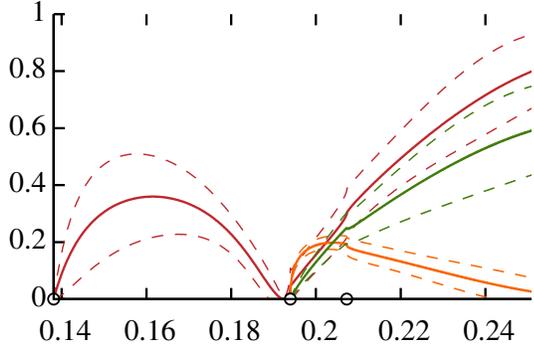
eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re=	0.0100 +/- 0.0067	k_re=	-0.0125 +/- 0.0084	k_re=	0.0521 +/- 0.0068
k_im=	-0.0590 +/- 0.0053	k_im=	0.0470 +/- 0.0064	k_im=	-0.0113 +/- 0.0069
corr=	[ 0.23]	corr=	[ 0.18]	corr=	[-0.32]
g =	0.0603 +/- 0.0149	g =	0.1655 +/- 0.0063	g =	0.0859 +/- 0.0268
arg(g)/pi=	-0.2039 +/- 0.0409	arg(g)/pi=	-0.9950 +/- 0.0171	arg(g)/pi=	-0.5540 +/- 0.0319
g_re=	0.0483 +/- 0.0148	g_re=	-0.1655 +/- 0.0063	g_re=	-0.0145 +/- 0.0089
g_im=	-0.0360 +/- 0.0078	g_im=	-0.0026 +/- 0.0089	g_im=	-0.0847 +/- 0.0268
corr=	[-0.52]	corr=	[ 0.26]	corr=	[ 0.29]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.13644 +/- 0.0030804)  
 + (i/2)\*(-1.0005e-15 +/- 2.994e-13) [-0.02]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re=	0.0000 +/- 0.0000	k_re=	0.0000 +/- 0.0000	k_re=	0.0000 +/- 0.0000
k_im=	-0.0780 +/- 0.0013	k_im=	-0.0689 +/- 0.0015	k_im=	-0.0107 +/- 0.0097
corr=	[ 0.02]	corr=	[ 0.02]	corr=	[ 0.02]
g =	0.0264 +/- 0.0064	g =	0.0136 +/- 0.0111	g =	0.0737 +/- 0.0296
arg(g)/pi=	0.5000 +/- 0.0000	arg(g)/pi=	-0.5000 +/- 0.0000	arg(g)/pi=	0.5000 +/- 0.0000
g_re=	0.0000 +/- 0.0000	g_re=	0.0000 +/- 0.0000	g_re=	-0.0000 +/- 0.0000
g_im=	0.0264 +/- 0.0064	g_im=	-0.0136 +/- 0.0111	g_im=	0.0737 +/- 0.0296
corr=	[-1.00]	corr=	[-0.82]	corr=	[-0.07]

# k\_inv\_poly\_clcccc\_noCM



## parameter values

minimised with  $\text{chisq}/n\text{DoF} = 25.49 / (41 - 7) = 0.75$

JP0+_c_eta:eta/1^S_0 eta:eta/1^S_0_order0	-3.6898 +/- 1.4024	1.00	0.77	0.16	-0.07	0.29	-0.18	-0.38
JP0+_c_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	-1.7632 +/- 0.46229	1.00	-0.07	0.56	0.05	-0.11	-0.11	
JP0+_c_eta:eta/1^S_0 pi:pi/1^S_0_order0	0.62404 +/- 0.48031		1.00	-0.35	0.81	-0.40	-0.92	
JP0+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	-1.0701 +/- 0.32583			1.00	-0.39	0.16	0.35	
JP0+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	-0.86398 +/- 0.48354				1.00	-0.84	-0.83	
JP0+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order1	0.59482 +/- 0.278					1.00	0.47	
JP0+_c_pi:pi/1^S_0 pi:pi/1^S_0_order0	0.20433 +/- 0.17784						1.00	

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.1258 \pm 0.0091935)$   
 $+ (i/2) * (+5.8084e-14 \mp 1.7369e-11) [0.07]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000
k_im= 0.0824 +/- 0.0035	k_im= 0.0738 +/- 0.0039	k_im= 0.0285 +/- 0.0102
corr= [-0.07]	corr= [-0.07]	corr= [-0.07]
g = 0.0299 +/- 0.0182	g = 0.0751 +/- 0.0082	g = 0.0984 +/- 0.0056
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.0299 +/- 0.0182	g_re= -0.0751 +/- 0.0082	g_re= -0.0984 +/- 0.0056
g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000
corr= [-1.00]	corr= [-0.26]	corr= [0.39]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

$\text{sqrt}(s)_{\text{pole}} = (0.20186 \pm 0.0040414)$   
 $+ (i/2) * (-0.024208 \mp 0.0077167) [0.36]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
---------------	-----------------	-------------

k_re= -0.0196 +/- 0.0043	k_re= -0.0330 +/- 0.0045	k_re= 0.0738 +/- 0.0027
k_im= 0.0312 +/- 0.0063	k_im= 0.0185 +/- 0.0059	k_im= -0.0083 +/- 0.0027
corr= [-0.08]	corr= [ 0.27]	corr= [ 0.37]
=====		
g = 0.0662 +/- 0.0173	g = 0.1298 +/- 0.0136	g = 0.0923 +/- 0.0135
arg(g)/pi= 0.1311 +/- 0.0704	arg(g)/pi= -0.8079 +/- 0.0287	arg(g)/pi= -0.3691 +/- 0.0344
=====		
g_re= 0.0607 +/- 0.0197	g_re= -0.1069 +/- 0.0158	g_re= 0.0369 +/- 0.0086
g_im= 0.0265 +/- 0.0113	g_im= -0.0736 +/- 0.0085	g_im= -0.0846 +/- 0.0144
corr= [-0.28]	corr= [-0.06]	corr= [ 0.05]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.076021 +/- 0.012567)  
+ (i/2)\*(-0.059474 +/- 0.058933) [-0.52]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
=====					
k_re= -0.0058 +/- 0.0062	k_re= 0.0062 +/- 0.0067	k_re= 0.0094 +/- 0.0098			
k_im= 0.0977 +/- 0.0024	k_im= -0.0907 +/- 0.0026	k_im= -0.0603 +/- 0.0044			
corr= [-0.41]	corr= [-0.43]	corr= [-0.56]			
=====					
g = 0.0654 +/- 0.0154	g = 0.0474 +/- 0.0095	g = 0.0580 +/- 0.0150			
arg(g)/pi= -0.3105 +/- 0.0812	arg(g)/pi= 0.5320 +/- 0.1780	arg(g)/pi= -0.5646 +/- 0.2354			
=====					
g_re= 0.0367 +/- 0.0154	g_re= -0.0048 +/- 0.0267	g_re= -0.0117 +/- 0.0429			
g_im= -0.0542 +/- 0.0167	g_im= 0.0472 +/- 0.0090	g_im= -0.0568 +/- 0.0149			
corr= [ 0.12]	corr= [-0.07]	corr= [-0.25]			

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.11841 +/- 0.015558)  
+ (i/2)\*(+1.1296e-17 +/- 3.3792e-15) [ 0.05]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
=====					
k_re= -0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000			
k_im= -0.0851 +/- 0.0054	k_im= 0.0768 +/- 0.0060	k_im= 0.0355 +/- 0.0130			
corr= [-0.05]	corr= [-0.05]	corr= [-0.05]			
=====					
g = 0.0210 +/- 0.0087	g = 0.0930 +/- 0.0055	g = 0.0905 +/- 0.0069			
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000			
=====					
g_re= 0.0210 +/- 0.0087	g_re= -0.0930 +/- 0.0055	g_re= -0.0905 +/- 0.0069			
g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000			
corr= [-1.00]	corr= [ 0.09]	corr= [-0.75]			

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.20047 +/- 0.009567)  
+ (i/2)\*(-0.044271 +/- 0.021227) [ 0.63]

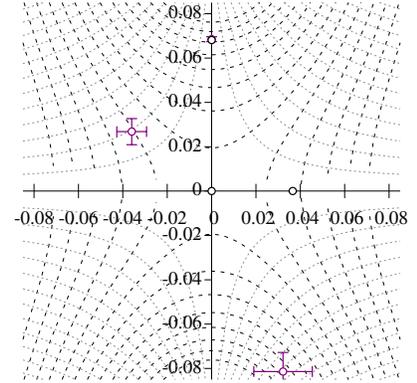
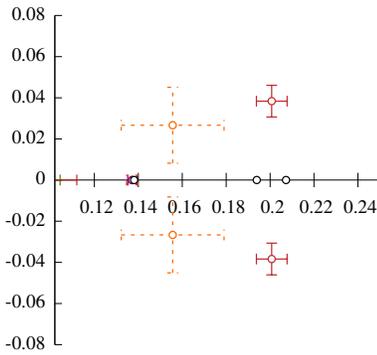
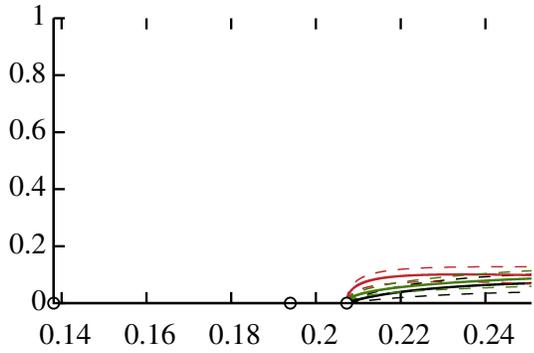
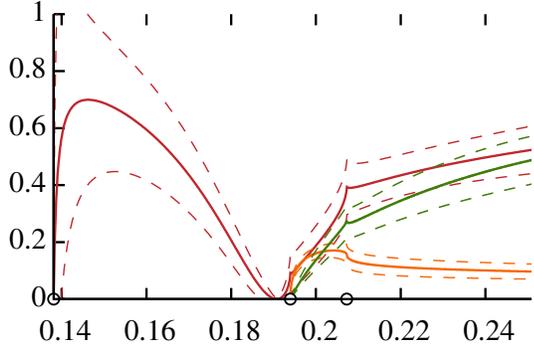
eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
=====					
k_re= 0.0278 +/- 0.0066	k_re= -0.0374 +/- 0.0067	k_re= 0.0734 +/- 0.0060			
k_im= -0.0399 +/- 0.0133	k_im= 0.0297 +/- 0.0135	k_im= -0.0151 +/- 0.0075			
corr= [-0.23]	corr= [ 0.22]	corr= [ 0.61]			
=====					
g = 0.0720 +/- 0.0244	g = 0.1642 +/- 0.0284	g = 0.1092 +/- 0.0224			
arg(g)/pi= 0.0752 +/- 0.1138	arg(g)/pi= -0.8253 +/- 0.0593	arg(g)/pi= -0.3471 +/- 0.0597			
=====					
g_re= 0.0700 +/- 0.0284	g_re= -0.1401 +/- 0.0390	g_re= 0.0504 +/- 0.0141			
g_im= 0.0169 +/- 0.0214	g_im= -0.0857 +/- 0.0149	g_im= -0.0968 +/- 0.0269			
corr= [-0.68]	corr= [-0.70]	corr= [ 0.35]			

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.11379 +/- 0.015537)  
+ (i/2)\*(+7.3193e-14 +/- 2.1908e-11) [ 0.04]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
=====					
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000			
k_im= -0.0866 +/- 0.0051	k_im= -0.0785 +/- 0.0056	k_im= -0.0391 +/- 0.0113			
corr= [-0.04]	corr= [-0.04]	corr= [-0.04]			
=====					
g = 0.0290 +/- 0.0118	g = 0.0489 +/- 0.0086	g = 0.1041 +/- 0.0082			
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000	arg(g)/pi= 0.5000 +/- 0.0000			
=====					
g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000			
g_im= 0.0290 +/- 0.0118	g_im= -0.0489 +/- 0.0086	g_im= 0.1041 +/- 0.0082			
corr= [-1.00]	corr= [-0.76]	corr= [ 0.66]			

# k\_inv\_poly\_ccclcc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 26.30 / (41 - 7) = 0.77$

JPO+_c_eta:eta/1^S_0 eta:eta/1^S_0_order0	-1.6440 +/- 0.53864	1.00	0.86	-0.65	0.33	-0.14	-0.35	0.08
JPO+_c_eta:eta/1^S_0 kaon:kaon/1^S_0_order0	-0.95289 +/- 0.31642	1.00	-0.63	0.68	-0.37	-0.63	0.16	
JPO+_c_eta:eta/1^S_0 pi:pi/1^S_0_order0	0.93109 +/- 0.24208		1.00	-0.23	0.01	0.75	-0.77	
JPO+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order0	-1.3705 +/- 0.47588			1.00	-0.87	-0.65	0.03	
JPO+_c_kaon:kaon/1^S_0 kaon:kaon/1^S_0_order1	0.45573 +/- 0.28128				1.00	0.38	0.11	
JPO+_c_kaon:kaon/1^S_0 pi:pi/1^S_0_order0	0.11893 +/- 0.19329					1.00	-0.67	
JPO+_c_pi:pi/1^S_0 pi:pi/1^S_0_order0	-0.20745 +/- 0.20166						1.00	

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = (0.13725 \pm 0.0021127) + (i/2)*(-1.0278e-15 \pm 3.0617e-13) [0.01]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= 0.0777 +/- 0.0009	k_im= 0.0685 +/- 0.0011	k_im= 0.0077 +/- 0.0094
corr= [-0.01]	corr= [-0.01]	corr= [-0.01]
g = 0.0015 +/- 0.0139	g = 0.0539 +/- 0.4184	g = 0.0545 +/- 0.4207
arg(g)/pi= 0.0011 +/- 0.0280	arg(g)/pi= 0.9974 +/- 0.2096	arg(g)/pi= 0.9974 +/- 0.2091
g_re= 0.0015 +/- 0.0139	g_re= -0.0539 +/- 0.4183	g_re= -0.0545 +/- 0.4207
g_im= 0.0000 +/- 0.0001	g_im= 0.0004 +/- 0.0361	g_im= 0.0004 +/- 0.0364
corr= [-0.59]	corr= [-0.22]	corr= [-0.22]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

$\text{sqrt}(s)_{\text{pole}} = (0.20075 \pm 0.0070033) + (i/2)*(-0.038348 \pm 0.0077096) [0.17]$

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
---------------	-----------------	-------------

```

k_re= -0.0256 +/- 0.0055 | k_re= -0.0360 +/- 0.0067 | k_re= 0.0734 +/- 0.0047 |
k_im= 0.0376 +/- 0.0070 | k_im= 0.0268 +/- 0.0059 | k_im= -0.0131 +/- 0.0027 |
corr= [ 0.52] | corr= [ 0.54] | corr= [ 0.26] |
=====
|g|= 0.1240 +/- 0.0152 | |g|= 0.1610 +/- 0.0188 | |g|= 0.1270 +/- 0.0175 |
arg(g)/pi= 0.0331 +/- 0.0630 | arg(g)/pi= -0.7952 +/- 0.0533 | arg(g)/pi= -0.3875 +/- 0.0653 |
=====
g_re= 0.1234 +/- 0.0148 | g_re= -0.1288 +/- 0.0229 | g_re= 0.0439 +/- 0.0261 |
g_im= 0.0129 +/- 0.0248 | g_im= -0.0966 +/- 0.0236 | g_im= -0.1191 +/- 0.0175 |
corr= [ 0.08] | corr= [-0.35] | corr= [ 0.15] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.088076 +/- 0.023905)  
+ (i/2)\*(+5.1445e-13 +/- 1.5406e-10) [-0.03]

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= 0.0938 +/- 0.0056 | k_im= 0.0864 +/- 0.0061 | k_im= -0.0532 +/- 0.0099 |
corr= [ 0.03] | corr= [ 0.03] | corr= [ 0.03] |
=====
|g|= 0.0556 +/- 0.0222 | |g|= 0.0699 +/- 0.0352 | |g|= 0.0424 +/- 0.0284 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 | arg(g)/pi= -0.0000 +/- 0.0000 |
=====
g_re= 0.0556 +/- 0.0222 | g_re= 0.0699 +/- 0.0352 | g_re= 0.0424 +/- 0.0284 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 | g_im= -0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [ 0.27] | corr= [ 0.13] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.08736 +/- 0.017044)  
+ (i/2)\*(+4.3669e-16 +/- 1.3061e-13) [-0.01]

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= 0.0940 +/- 0.0040 | k_im= -0.0866 +/- 0.0043 | k_im= 0.0535 +/- 0.0070 |
corr= [ 0.01] | corr= [ 0.01] | corr= [ 0.01] |
=====
|g|= 0.0625 +/- 0.0153 | |g|= 0.0203 +/- 0.0050 | |g|= 0.0548 +/- 0.0168 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 |
=====
g_re= 0.0625 +/- 0.0153 | g_re= -0.0203 +/- 0.0050 | g_re= -0.0548 +/- 0.0168 |
g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [ 0.19] | corr= [ 0.11] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.14346 +/- 0.027959)  
+ (i/2)\*(-0.14606 +/- 0.039704) [-0.39]

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0296 +/- 0.0123 | k_re= 0.0322 +/- 0.0132 | k_re= 0.0467 +/- 0.0163 |
k_im= 0.0884 +/- 0.0083 | k_im= -0.0814 +/- 0.0086 | k_im= -0.0560 +/- 0.0095 |
corr= [ 0.35] | corr= [ 0.31] | corr= [-0.02] |
=====
|g|= 0.1656 +/- 0.0480 | |g|= 0.0679 +/- 0.0178 | |g|= 0.1458 +/- 0.0381 |
arg(g)/pi= -0.2384 +/- 0.0768 | arg(g)/pi= 0.6292 +/- 0.0723 | arg(g)/pi= -0.5418 +/- 0.0394 |
=====
g_re= 0.1213 +/- 0.0503 | g_re= -0.0268 +/- 0.0156 | g_re= -0.0191 +/- 0.0176 |
g_im= -0.1127 +/- 0.0370 | g_im= 0.0624 +/- 0.0176 | g_im= -0.1446 +/- 0.0383 |
corr= [-0.17] | corr= [-0.08] | corr= [ 0.02] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.13721 +/- 0.0026447)  
+ (i/2)\*(+1.946e-16 +/- 5.9302e-14) [-0.02]

```

eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= -0.0777 +/- 0.0012 | k_im= 0.0685 +/- 0.0013 | k_im= 0.0079 +/- 0.0114 |
corr= [ 0.02] | corr= [ 0.02] | corr= [ 0.02] |
=====
|g|= 0.0025 +/- 0.0252 | |g|= 0.0603 +/- 0.4273 | |g|= 0.0544 +/- 0.4052 |
arg(g)/pi= 0.0005 +/- 0.0148 | arg(g)/pi= 0.9989 +/- 0.1772 | arg(g)/pi= 0.9989 +/- 0.1967 |
=====
g_re= 0.0025 +/- 0.0252 | g_re= -0.0603 +/- 0.4273 | g_re= -0.0544 +/- 0.4052 |
g_im= 0.0000 +/- 0.0001 | g_im= 0.0002 +/- 0.0339 | g_im= 0.0002 +/- 0.0340 |
corr= [-0.52] | corr= [-0.25] | corr= [-0.28] |
*****

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.15564 +/- 0.023402)  
+ (i/2)\*(-0.026654 +/- 0.018434) [-0.32]

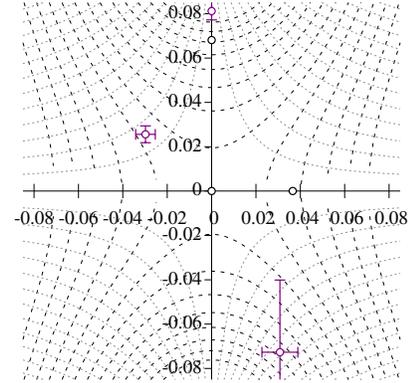
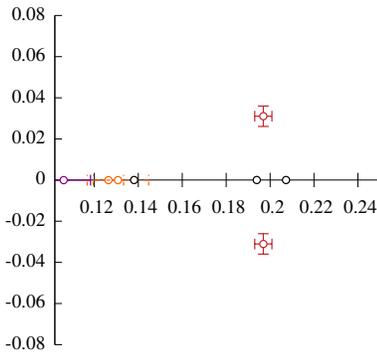
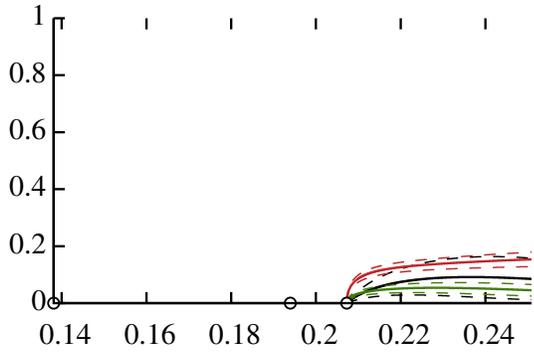
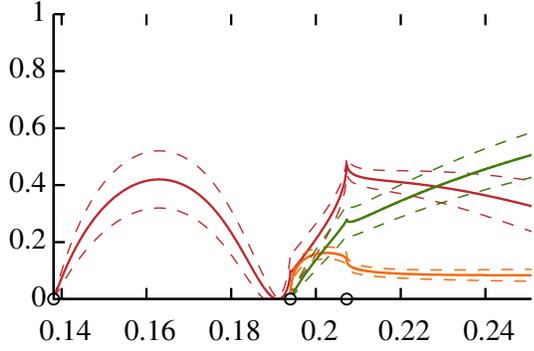
eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0075 +/- 0.0063	k_re= -0.0088 +/- 0.0078	k_re= 0.0378 +/- 0.0228
k_im= -0.0692 +/- 0.0126	k_im= 0.0589 +/- 0.0146	k_im= -0.0137 +/- 0.0088
corr= [ 0.59]	corr= [ 0.63]	corr= [ 0.27]
g = 0.0755 +/- 0.0106	g = 0.1908 +/- 0.0251	g = 0.0854 +/- 0.0219
arg(g)/pi= -0.1777 +/- 0.0475	arg(g)/pi= 0.9800 +/- 0.0211	arg(g)/pi= -0.5535 +/- 0.0629
g_re= 0.0640 +/- 0.0091	g_re= -0.1904 +/- 0.0252	g_re= -0.0143 +/- 0.0182
g_im= -0.0400 +/- 0.0125	g_im= 0.0120 +/- 0.0124	g_im= -0.0842 +/- 0.0208
corr= [-0.08]	corr= [ 0.08]	corr= [ 0.41]

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.13702 +/- 0.0018142)  
 + (i/2)\*(+1.3187e-13 +/- 3.9466e-11) [-0.01]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= -0.0778 +/- 0.0008	k_im= -0.0686 +/- 0.0009	k_im= -0.0087 +/- 0.0071
corr= [ 0.01]	corr= [ 0.01]	corr= [ 0.01]
g = 0.0250 +/- 0.0070	g = 0.0074 +/- 0.0061	g = 0.0671 +/- 0.0255
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= -0.5000 +/- 0.0000	arg(g)/pi= 0.5000 +/- 0.0000
g_re= 0.0000 +/- 0.0000	g_re= 0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000
g_im= 0.0250 +/- 0.0070	g_im= -0.0074 +/- 0.0061	g_im= 0.0671 +/- 0.0255
corr= [-1.00]	corr= [-0.73]	corr= [ 0.50]

# k\_poly\_lcxxxx



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 30.95 / (41 - 7) = 0.91$

JPO+ <sub>gamma_eta:eta/1^S_0</sub> eta:eta/1^S_0_order0	6.9914 +/- 1.1917	1.00	-0.49	0.68	-0.29	-0.03	0.28	0.09
JPO+ <sub>gamma_eta:eta/1^S_0</sub> kaon:kaon/1^S_0_orde	-5.0077 +/- 0.47082	1.00	-0.46	-0.56	0.57	-0.34	0.00	
JPO+ <sub>gamma_eta:eta/1^S_0</sub> pi:pi/1^S_0_order0	7.2313 +/- 0.99886	1.00	-0.21	-0.48	0.79	0.43		
JPO+ <sub>gamma_kaon:kaon/1^S_0</sub> kaon:kaon/1^S_0_or	2.2764 +/- 0.58318	1.00	-0.64	0.05	-0.13			
JPO+ <sub>gamma_kaon:kaon/1^S_0</sub> pi:pi/1^S_0_order0	-5.1644 +/- 0.60017	1.00	-0.71	-0.25				
JPO+ <sub>gamma_pi:pi/1^S_0</sub> pi:pi/1^S_0_order0	4.3439 +/- 1.0058	1.00	0.07					
JPO+ <sub>gamma_pi:pi/1^S_0</sub> pi:pi/1^S_0_order1	1.2522 +/- 0.54095	1.00						
JPO+ <sub>gamma_eta:eta/1^S_0</sub> eta:eta/1^S_0_order1	0.0000 +/- 0							FIXED
JPO+ <sub>gamma_eta:eta/1^S_0</sub> kaon:kaon/1^S_0_orde	0.0000 +/- 0							FIXED
JPO+ <sub>gamma_eta:eta/1^S_0</sub> pi:pi/1^S_0_order1	0.0000 +/- 0							FIXED
JPO+ <sub>gamma_kaon:kaon/1^S_0</sub> kaon:kaon/1^S_0_or	0.0000 +/- 0							FIXED
JPO+ <sub>gamma_kaon:kaon/1^S_0</sub> pi:pi/1^S_0_order1	0.0000 +/- 0							FIXED

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

$\text{sqrt}(s)_{\text{pole}} = ( 0.106 \text{ +/- } 0.012267) + (i/2)*(-2.3145e-10 \text{ +/- } 7.1373e-08) [ 0.04]$

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= -0.0000 +/- 0.0000					
k_im= 0.0891 +/- 0.0036	k_im= 0.0812 +/- 0.0040	k_im= 0.0812 +/- 0.0040	k_im= 0.0443 +/- 0.0073	k_im= 0.0443 +/- 0.0073	k_im= 0.0443 +/- 0.0073
corr= [-0.04]					
g = 0.0465 +/- 0.0211	g = 0.1231 +/- 0.0301	g = 0.1231 +/- 0.0301	g = 0.1728 +/- 0.0157	g = 0.1728 +/- 0.0157	g = 0.1728 +/- 0.0157
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000				
g_re= 0.0465 +/- 0.0211	g_re= -0.1231 +/- 0.0301	g_re= -0.1231 +/- 0.0301	g_re= -0.1728 +/- 0.0157	g_re= -0.1728 +/- 0.0157	g_re= -0.1728 +/- 0.0157
g_im= 0.0000 +/- 0.0000					
corr= [-1.00]	corr= [-0.67]	corr= [-0.67]	corr= [ 0.15]	corr= [ 0.15]	corr= [ 0.15]

\*\*\*\*\*

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.19693 +/- 0.0039361)  
+ (i/2)\*(-0.031033 +/- 0.0049634) [-0.00]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0198 +/- 0.0034	k_re= -0.0298 +/- 0.0044	k_re= 0.0706 +/- 0.0027
k_im= 0.0387 +/- 0.0041	k_im= 0.0256 +/- 0.0038	k_im= -0.0108 +/- 0.0017
corr= [ 0.39]	corr= [ 0.41]	corr= [ 0.07]
g = 0.1388 +/- 0.0227	g = 0.1365 +/- 0.0175	g = 0.1010 +/- 0.0098
arg(g)/pi= 0.0219 +/- 0.0322	arg(g)/pi= -0.8478 +/- 0.0365	arg(g)/pi= -0.4374 +/- 0.0380
g_re= 0.1385 +/- 0.0220	g_re= -0.1212 +/- 0.0151	g_re= 0.0197 +/- 0.0129
g_im= 0.0095 +/- 0.0151	g_im= -0.0628 +/- 0.0180	g_im= -0.0991 +/- 0.0088
corr= [ 0.70]	corr= [ 0.26]	corr= [-0.38]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = ( 0.1538 +/- 0.052922)  
+ (i/2)\*(-0.11675 +/- 0.074624) [ 0.93]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0279 +/- 0.0064	k_re= 0.0308 +/- 0.0081	k_re= 0.0490 +/- 0.0221
k_im= 0.0803 +/- 0.0305	k_im= -0.0727 +/- 0.0326	k_im= -0.0458 +/- 0.0328
corr= [ 0.45]	corr= [ 0.64]	corr= [ 0.92]
g = 0.3053 +/- 0.1624	g = 0.0830 +/- 0.0353	g = 0.1074 +/- 0.0104
arg(g)/pi= -0.0419 +/- 0.0571	arg(g)/pi= 0.7574 +/- 0.1121	arg(g)/pi= -0.4943 +/- 0.0175
g_re= 0.3027 +/- 0.1543	g_re= -0.0600 +/- 0.0104	g_re= 0.0019 +/- 0.0057
g_im= -0.0401 +/- 0.0745	g_im= 0.0573 +/- 0.0446	g_im= -0.1074 +/- 0.0105
corr= [-0.96]	corr= [-0.52]	corr= [ 0.80]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.13074 +/- 0.014008)  
+ (i/2)\*(-1.6685e-11 +/- 4.8453e-09) [-0.06]

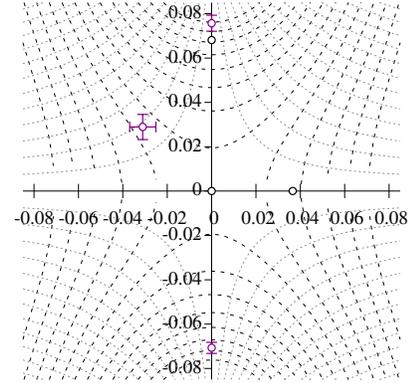
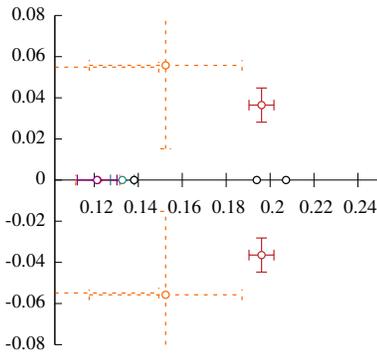
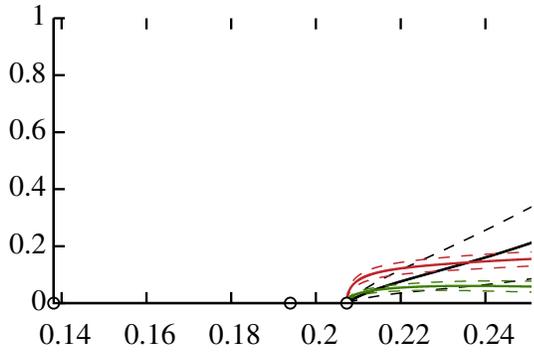
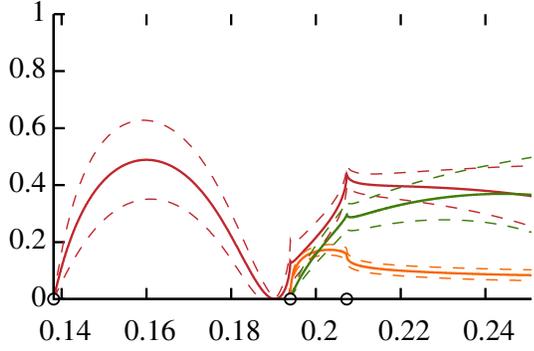
eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= -0.0804 +/- 0.0057	k_im= 0.0716 +/- 0.0064	k_im= 0.0222 +/- 0.0206
corr= [ 0.06]	corr= [ 0.06]	corr= [ 0.06]
g = 0.0399 +/- 0.0126	g = 0.0899 +/- 0.1060	g = 0.1360 +/- 0.0872
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000	arg(g)/pi= -0.0000 +/- 0.0000
g_re= 0.0399 +/- 0.0126	g_re= -0.0899 +/- 0.1060	g_re= 0.1360 +/- 0.0872
g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_im= -0.0000 +/- 0.0000
corr= [-1.00]	corr= [-0.84]	corr= [-0.72]

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.12641 +/- 0.0068893)  
+ (i/2)\*(-4.4522e-14 +/- 1.1048e-11) [-0.02]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0000 +/- 0.0000	k_re= 0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= -0.0821 +/- 0.0026	k_im= -0.0736 +/- 0.0030	k_im= 0.0278 +/- 0.0078
corr= [ 0.02]	corr= [ 0.02]	corr= [ 0.02]
g = 0.0232 +/- 0.0081	g = 0.0052 +/- 0.0054	g = 0.1524 +/- 0.0293
arg(g)/pi= 0.0000 +/- 0.0000	arg(g)/pi= 1.0000 +/- 0.0000	arg(g)/pi= -0.0000 +/- 0.0000
g_re= 0.0232 +/- 0.0081	g_re= -0.0052 +/- 0.0054	g_re= 0.1524 +/- 0.0293
g_im= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_im= -0.0000 +/- 0.0000
corr= [-1.00]	corr= [-0.97]	corr= [ 0.88]

# k\_poly\_clcccc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 32.18 / (41 - 7) = 0.95$

JPO+ <sub>gamma_eta:eta/1^S_0 eta:eta/1^S_0_order0</sub>	5.1453 +/- 1.4979	1.00	-0.75	0.85	-0.11	-0.26	0.05	0.50	
JPO+ <sub>gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_orde</sub>	-4.0879 +/- 0.65658	1.00	-0.76	-0.51	0.55	0.05	-0.57		
JPO+ <sub>gamma_eta:eta/1^S_0 pi:pi/1^S_0_order0</sub>	5.4641 +/- 1.1152			1.00	0.02	-0.55	0.08	0.86	
JPO+ <sub>gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_or</sub>	1.8810 +/- 0.63104				1.00	-0.49	-0.18	0.19	
JPO+ <sub>gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order0</sub>	-5.4512 +/- 0.76804					1.00	-0.54	-0.76	
JPO+ <sub>gamma_kaon:kaon/1^S_0 pi:pi/1^S_0_order1</sub>	0.95269 +/- 0.41937						1.00	0.14	
JPO+ <sub>gamma_pi:pi/1^S_0 pi:pi/1^S_0_order0</sub>	4.2048 +/- 1.0599							1.00	
JPO+ <sub>gamma_eta:eta/1^S_0 eta:eta/1^S_0_order1</sub>	0.0000 +/- 0								FIXED
JPO+ <sub>gamma_eta:eta/1^S_0 kaon:kaon/1^S_0_orde</sub>	0.0000 +/- 0								FIXED
JPO+ <sub>gamma_eta:eta/1^S_0 pi:pi/1^S_0_order1</sub>	0.0000 +/- 0								FIXED
JPO+ <sub>gamma_kaon:kaon/1^S_0 kaon:kaon/1^S_0_or</sub>	0.0000 +/- 0								FIXED
JPO+ <sub>gamma_pi:pi/1^S_0 pi:pi/1^S_0_order1</sub>	0.0000 +/- 0								FIXED

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.12125 +/- 0.0090055)  
 + (i/2)\*(+1.9269e-12 +/- 3.2905e-10) [-0.09]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0000 +/- 0.0000	k_im= 0.0841 +/- 0.0032	corr= [ 0.09]	k_re= 0.0000 +/- 0.0000	k_im= 0.0757 +/- 0.0036	corr= [ 0.09]
g = 0.0031 +/- 0.0117	arg(g)/pi= 0.0002 +/- 0.0015		g = 0.1351 +/- 0.0243	arg(g)/pi= -0.0002 +/- 0.0022	
g_re= 0.0031 +/- 0.0117	g_im= 0.0000 +/- 0.0000	corr= [-0.93]	g_re= 0.1351 +/- 0.0243	g_im= -0.0001 +/- 0.0009	corr= [-0.28]
			g = 0.1400 +/- 0.0175	arg(g)/pi= -0.0002 +/- 0.0022	
			g_re= 0.1400 +/- 0.0175	g_im= -0.0001 +/- 0.0010	corr= [-0.41]

\*\*\*\*\*

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

```

sqrt(s)_pole = (0.19609 +/- 0.005678)
               + (i/2)*(-0.036446 +/- 0.0083157) [ 0.05]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0218 +/- 0.0048 | k_re= -0.0310 +/- 0.0059 | k_re= 0.0702 +/- 0.0039 |
k_im= 0.0410 +/- 0.0057 | k_im= 0.0289 +/- 0.0057 | k_im= -0.0127 +/- 0.0029 |
corr= [ 0.26] | corr= [ 0.31] | corr= [ 0.11] |
=====
|g|= 0.1427 +/- 0.0342 | |g|= 0.1705 +/- 0.0167 | |g|= 0.1165 +/- 0.0200 |
arg(g)/pi= -0.0442 +/- 0.0851 | arg(g)/pi= -0.8304 +/- 0.0506 | arg(g)/pi= -0.4611 +/- 0.0697 |
=====
g_re= 0.1414 +/- 0.0358 | g_re= -0.1468 +/- 0.0234 | g_re= 0.0142 +/- 0.0256 |
g_im= -0.0198 +/- 0.0367 | g_im= -0.0866 +/- 0.0216 | g_im= -0.1156 +/- 0.0199 |
corr= [ 0.31] | corr= [-0.56] | corr= [-0.01] |
=====

```

```

*****
JP=0+ || eta:eta/1^S_0[+] kaon:kaon/1^S_0[-] pi:pi/1^S_0[-]

```

```

sqrt(s)_pole = (0.13274 +/- 0.0054305)
               + (i/2)*(+2.2831e-14 +/- 6.36e-12) [-0.08]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= 0.0796 +/- 0.0023 | k_im= -0.0707 +/- 0.0025 | k_im= -0.0191 +/- 0.0094 |
corr= [ 0.08] | corr= [ 0.08] | corr= [ 0.08] |
=====
|g|= 0.0882 +/- 0.0449 | |g|= 0.0274 +/- 0.0079 | |g|= 0.0799 +/- 0.0076 |
arg(g)/pi= 0.5000 +/- 0.0000 | arg(g)/pi= -0.5000 +/- 0.0000 | arg(g)/pi= 0.5000 +/- 0.0000 |
=====
g_re= 0.0000 +/- 0.0000 | g_re= 0.0000 +/- 0.0000 | g_re= -0.0000 +/- 0.0000 |
g_im= 0.0882 +/- 0.0449 | g_im= -0.0274 +/- 0.0079 | g_im= 0.0799 +/- 0.0076 |
corr= [-1.00] | corr= [ 0.94] | corr= [ 0.97] |
=====

```

```

*****
JP=0+ || eta:eta/1^S_0[-] kaon:kaon/1^S_0[+] pi:pi/1^S_0[+]

```

```

sqrt(s)_pole = (0.12152 +/- 0.010072)
               + (i/2)*(-6.2128e-12 +/- 1.8383e-09) [-0.01]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 |
k_im= -0.0840 +/- 0.0036 | k_im= 0.0756 +/- 0.0040 | k_im= 0.0328 +/- 0.0093 |
corr= [ 0.01] | corr= [ 0.01] | corr= [ 0.01] |
=====
|g|= 0.0075 +/- 0.0339 | |g|= 0.1573 +/- 0.0980 | |g|= 0.1323 +/- 0.0437 |
arg(g)/pi= 0.0000 +/- 0.0003 | arg(g)/pi= 1.0000 +/- 0.0004 | arg(g)/pi= 1.0000 +/- 0.0005 |
=====
g_re= 0.0075 +/- 0.0339 | g_re= -0.1573 +/- 0.0980 | g_re= -0.1323 +/- 0.0437 |
g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0002 | g_im= 0.0000 +/- 0.0002 |
corr= [-0.91] | corr= [ 0.77] | corr= [-0.75] |
=====

```

```

*****
JP=0+ || eta:eta/1^S_0[-] kaon:kaon/1^S_0[+] pi:pi/1^S_0[+]

```

```

sqrt(s)_pole = (0.15245 +/- 0.034788)
               + (i/2)*(-0.055773 +/- 0.040577) [-0.78]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0146 +/- 0.0155 | k_re= -0.0167 +/- 0.0183 | k_re= -0.0396 +/- 0.0313 |
k_im= -0.0731 +/- 0.0140 | k_im= 0.0638 +/- 0.0149 | k_im= 0.0269 +/- 0.0094 |
corr= [ 0.84] | corr= [ 0.83] | corr= [-0.16] |
=====
|g|= 0.1067 +/- 0.0132 | |g|= 0.2427 +/- 0.1350 | |g|= 0.0991 +/- 0.0251 |
arg(g)/pi= 0.2625 +/- 0.0468 | arg(g)/pi= -0.7397 +/- 0.0481 | arg(g)/pi= 0.3953 +/- 0.1222 |
=====
g_re= 0.0724 +/- 0.0109 | g_re= -0.1659 +/- 0.0810 | g_re= 0.0320 +/- 0.0358 |
g_im= 0.0784 +/- 0.0174 | g_im= -0.1771 +/- 0.1140 | g_im= 0.0938 +/- 0.0283 |
corr= [-0.23] | corr= [ 0.89] | corr= [-0.35] |
=====

```

```

*****
JP=0+ || eta:eta/1^S_0[-] kaon:kaon/1^S_0[+] pi:pi/1^S_0[-]

```

```

sqrt(s)_pole = (0.13374 +/- 0.032579)
               + (i/2)*(-0.084692 +/- 0.072575) [-0.69]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0169 +/- 0.0181 | k_re= -0.0187 +/- 0.0200 | k_re= 0.0330 +/- 0.0284 |
k_im= -0.0837 +/- 0.0085 | k_im= 0.0757 +/- 0.0090 | k_im= -0.0429 +/- 0.0139 |
corr= [ 0.36] | corr= [ 0.30] | corr= [-0.42] |
=====
|g|= 0.0820 +/- 0.0263 | |g|= 0.3116 +/- 0.1698 | |g|= 0.0388 +/- 0.0233 |
arg(g)/pi= 0.1434 +/- 0.0606 | arg(g)/pi= -0.7966 +/- 0.0303 | arg(g)/pi= -0.6379 +/- 0.1328 |
=====
g_re= 0.0738 +/- 0.0225 | g_re= -0.2502 +/- 0.1202 | g_re= -0.0163 +/- 0.0236 |
g_im= 0.0357 +/- 0.0208 | g_im= -0.1858 +/- 0.1235 | g_im= -0.0352 +/- 0.0158 |
corr= [ 0.55] | corr= [ 0.99] | corr= [ 0.84] |
=====

```

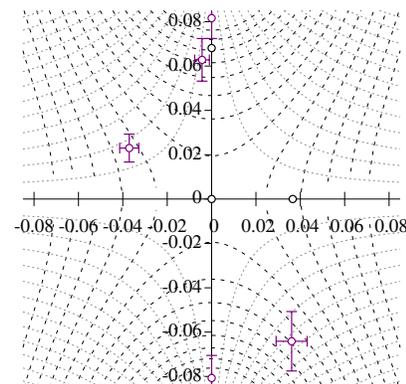
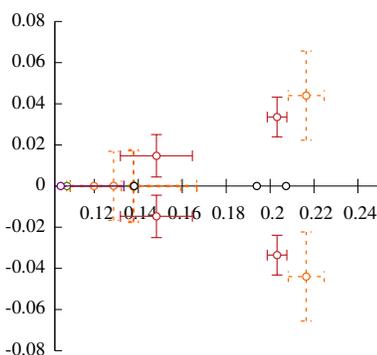
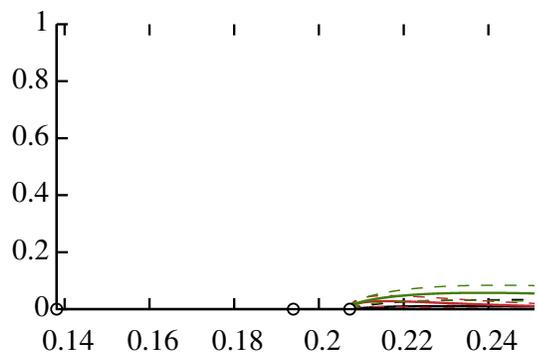
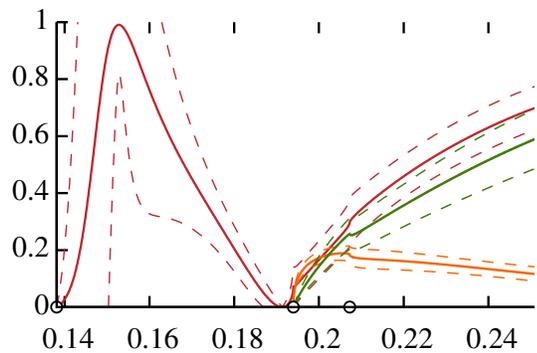
\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.10145 +/- 0.047838)  
 + (i/2)\*(-0.054898 +/- 0.12329) [-0.94]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0076 +/- 0.0207	k_re= 0.0083 +/- 0.0226	k_re= -0.0138 +/- 0.0378
k_im= -0.0917 +/- 0.0077	k_im= -0.0842 +/- 0.0080	k_im= 0.0508 +/- 0.0082
corr= [ 0.88]	corr= [ 0.87]	corr= [ 0.69]
g = 0.0608 +/- 0.0418	g = 0.0163 +/- 0.0080	g = 0.2449 +/- 0.3483
arg(g)/pi= 0.1905 +/- 0.0851	arg(g)/pi= 0.3344 +/- 0.2369	arg(g)/pi= 0.2327 +/- 0.0310
g_re= 0.0502 +/- 0.0267	g_re= 0.0081 +/- 0.0088	g_re= 0.1823 +/- 0.2441
g_im= 0.0342 +/- 0.0360	g_im= 0.0142 +/- 0.0115	g_im= 0.1636 +/- 0.2497
corr= [ 0.95]	corr= [-0.64]	corr= [ 1.00]

\*\*\*\*\*

# k\_poly\_clcccc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 23.70 / (41 - 7) = 0.70$

JPO+ <sub>gamma_eta:eta/1^S_0</sub> eta:eta/1^S_0_order0	-0.22222 +/- 0.34062	1.00	-0.28	-0.14	-0.33	-0.19	0.07	-0.18
JPO+ <sub>gamma_eta:eta/1^S_0</sub> kaon:kaon/1^S_0_orde	0.35639 +/- 0.23357	1.00	-0.50	-0.11	0.58	-0.56	-0.24	
JPO+ <sub>gamma_eta:eta/1^S_0</sub> pi:pi/1^S_0_order0	0.89799 +/- 0.31692		1.00	0.05	0.05	0.03	0.73	
JPO+ <sub>gamma_kaon:kaon/1^S_0</sub> kaon:kaon/1^S_0_or	-1.1288 +/- 0.28418			1.00	-0.50	0.54	-0.08	
JPO+ <sub>gamma_kaon:kaon/1^S_0</sub> pi:pi/1^S_0_order0	1.0208 +/- 0.94904				1.00	-0.98	0.01	
JPO+ <sub>gamma_kaon:kaon/1^S_0</sub> pi:pi/1^S_0_order1	-2.2552 +/- 0.87078					1.00	0.04	
JPO+ <sub>gamma_pi:pi/1^S_0</sub> pi:pi/1^S_0_order0	0.73536 +/- 0.30854						1.00	
JPO+ <sub>gamma_eta:eta/1^S_0</sub> eta:eta/1^S_0_order1	0.0000 +/- 0							FIXED
JPO+ <sub>gamma_eta:eta/1^S_0</sub> kaon:kaon/1^S_0_orde	0.0000 +/- 0							FIXED
JPO+ <sub>gamma_eta:eta/1^S_0</sub> pi:pi/1^S_0_order1	0.0000 +/- 0							FIXED
JPO+ <sub>gamma_kaon:kaon/1^S_0</sub> kaon:kaon/1^S_0_or	0.0000 +/- 0							FIXED
JPO+ <sub>gamma_pi:pi/1^S_0</sub> pi:pi/1^S_0_order1	0.0000 +/- 0							FIXED

## pole singularities

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

sqrt(s)\_pole = (0.10469 +/- 0.028727)  
 + (i/2)\*(+6.2779e-14 +/- 1.8689e-11) [ 0.04]

eta:eta/1^S_0		kaon:kaon/1^S_0		pi:pi/1^S_0	
k_re= 0.0000 +/- 0.0000	k_im= 0.0894 +/- 0.0084	k_re= 0.0000 +/- 0.0000	k_im= 0.0816 +/- 0.0092	k_re= 0.0000 +/- 0.0000	k_im= 0.0450 +/- 0.0167
corr= [-0.04]		corr= [-0.04]		corr= [-0.04]	
g = 0.0592 +/- 0.0205	arg(g)/pi= 0.0000 +/- 0.0000	g = 0.0215 +/- 0.0349	arg(g)/pi= -0.0000 +/- 0.0000	g = 0.0631 +/- 0.0244	arg(g)/pi= 1.0000 +/- 0.0000
g_re= 0.0592 +/- 0.0205	g_im= 0.0000 +/- 0.0000	g_re= 0.0215 +/- 0.0349	g_im= -0.0000 +/- 0.0000	g_re= -0.0631 +/- 0.0244	g_im= 0.0000 +/- 0.0000
corr= [-1.00]		corr= [-0.95]		corr= [ 0.55]	

\*\*\*\*\*

\*\*\*\*\*  
 JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

```

sqrt(s)_pole = (0.14824 +/- 0.016378)
               + (i/2)*(-0.014719 +/- 0.0103) [-0.09]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0038 +/- 0.0028 | k_re= -0.0043 +/- 0.0033 | k_re= 0.0283 +/- 0.0198 |
k_im= 0.0726 +/- 0.0083 | k_im= 0.0628 +/- 0.0096 | k_im= -0.0096 +/- 0.0079 |
corr= [ 0.36] | corr= [ 0.39] | corr= [ 0.57] |
=====
|g|= 0.0436 +/- 0.0332 | |g|= 0.1253 +/- 0.0166 | |g|= 0.0749 +/- 0.0304 |
arg(g)/pi= -0.3025 +/- 0.1642 | arg(g)/pi= 0.8944 +/- 0.0650 | arg(g)/pi= 0.8579 +/- 0.0595 |
=====
g_re= 0.0253 +/- 0.0338 | g_re= -0.1185 +/- 0.0200 | g_re= -0.0676 +/- 0.0268 |
g_im= -0.0354 +/- 0.0216 | g_im= 0.0408 +/- 0.0231 | g_im= 0.0324 +/- 0.0201 |
corr= [-0.59] | corr= [ 0.48] | corr= [-0.63] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

```

sqrt(s)_pole = (0.20318 +/- 0.004441)
               + (i/2)*(-0.033569 +/- 0.0096485) [ 0.38]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0253 +/- 0.0045 | k_re= -0.0371 +/- 0.0043 | k_re= 0.0749 +/- 0.0029 |
k_im= 0.0337 +/- 0.0066 | k_im= 0.0230 +/- 0.0063 | k_im= -0.0114 +/- 0.0033 |
corr= [-0.14] | corr= [ 0.17] | corr= [ 0.37] |
=====
|g|= 0.0877 +/- 0.0318 | |g|= 0.1452 +/- 0.0193 | |g|= 0.1133 +/- 0.0159 |
arg(g)/pi= 0.2312 +/- 0.1004 | arg(g)/pi= -0.7727 +/- 0.0381 | arg(g)/pi= -0.3541 +/- 0.0295 |
=====
g_re= 0.0656 +/- 0.0331 | g_re= -0.1097 +/- 0.0197 | g_re= 0.0501 +/- 0.0087 |
g_im= 0.0582 +/- 0.0261 | g_im= -0.0951 +/- 0.0169 | g_im= -0.1016 +/- 0.0169 |
corr= [ 0.11] | corr= [ 0.08] | corr= [-0.06] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[+]

```

sqrt(s)_pole = (0.10751 +/- 0.030509)
               + (i/2)*(+5.5487e-15 +/- 1.6543e-12) [ 0.02]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0000 +/- 0.0000 | k_re= -0.0000 +/- 0.0000 | k_re= 0.0000 +/- 0.0000 |
k_im= 0.0886 +/- 0.0093 | k_im= -0.0807 +/- 0.0102 | k_im= 0.0433 +/- 0.0189 |
corr= [-0.02] | corr= [-0.02] | corr= [-0.02] |
=====
|g|= 0.0714 +/- 0.0209 | |g|= 0.0088 +/- 0.0131 | |g|= 0.0690 +/- 0.0239 |
arg(g)/pi= 0.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 | arg(g)/pi= 1.0000 +/- 0.0000 |
=====
g_re= 0.0714 +/- 0.0209 | g_re= -0.0088 +/- 0.0131 | g_re= -0.0690 +/- 0.0239 |
g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 | g_im= 0.0000 +/- 0.0000 |
corr= [-1.00] | corr= [-0.92] | corr= [ 0.49] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[+] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

```

sqrt(s)_pole = (0.17121 +/- 0.016245)
               + (i/2)*(-0.10827 +/- 0.037395) [ 0.56]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= -0.0322 +/- 0.0068 | k_re= 0.0361 +/- 0.0070 | k_re= 0.0583 +/- 0.0085 |
k_im= 0.0720 +/- 0.0123 | k_im= -0.0641 +/- 0.0134 | k_im= -0.0397 +/- 0.0133 |
corr= [-0.24] | corr= [-0.13] | corr= [ 0.43] |
=====
|g|= 0.0916 +/- 0.0517 | |g|= 0.0690 +/- 0.0180 | |g|= 0.1367 +/- 0.0234 |
arg(g)/pi= 0.0795 +/- 0.1457 | arg(g)/pi= 0.5835 +/- 0.0624 | arg(g)/pi= -0.4127 +/- 0.0757 |
=====
g_re= 0.0887 +/- 0.0568 | g_re= -0.0179 +/- 0.0127 | g_re= 0.0370 +/- 0.0297 |
g_im= 0.0226 +/- 0.0347 | g_im= 0.0667 +/- 0.0186 | g_im= -0.1316 +/- 0.0269 |
corr= [-0.45] | corr= [ 0.08] | corr= [ 0.45] |
=====

```

\*\*\*\*\*  
JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[+]

```

sqrt(s)_pole = (0.17738 +/- 0.02205)
               + (i/2)*(-0.098419 +/- 0.042092) [ 0.57]

=====
eta:eta/1^S_0 | kaon:kaon/1^S_0 | pi:pi/1^S_0 |
=====
k_re= 0.0324 +/- 0.0087 | k_re= -0.0369 +/- 0.0094 | k_re= -0.0613 +/- 0.0122 |
k_im= -0.0673 +/- 0.0166 | k_im= 0.0592 +/- 0.0178 | k_im= 0.0356 +/- 0.0156 |
corr= [-0.03] | corr= [ 0.11] | corr= [ 0.54] |
=====
|g|= 0.0895 +/- 0.0166 | |g|= 0.1399 +/- 0.0094 | |g|= 0.0994 +/- 0.0145 |
arg(g)/pi= 0.3955 +/- 0.0497 | arg(g)/pi= -0.7105 +/- 0.0739 | arg(g)/pi= 0.9430 +/- 0.0341 |
=====
g_re= 0.0289 +/- 0.0138 | g_re= -0.0859 +/- 0.0241 | g_re= -0.0979 +/- 0.0153 |
g_im= 0.0847 +/- 0.0167 | g_im= -0.1104 +/- 0.0237 | g_im= 0.0177 +/- 0.0094 |
corr= [ 0.04] | corr= [-0.87] | corr= [ 0.41] |
=====

```

\*\*\*\*\*

JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.21647 +/- 0.0081734)  
+ (i/2)\*(-0.04397 +/- 0.021666) [-0.45]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0411 +/- 0.0115	k_re= -0.0521 +/- 0.0093	k_re= 0.0838 +/- 0.0054
k_im= -0.0289 +/- 0.0091	k_im= 0.0228 +/- 0.0090	k_im= -0.0142 +/- 0.0068
corr= [-0.47]	corr= [-0.51]	corr= [-0.48]
g = 0.0776 +/- 0.0231	g = 0.1541 +/- 0.0245	g = 0.1048 +/- 0.0189
arg(g)/pi= 0.3093 +/- 0.0810	arg(g)/pi= -0.7120 +/- 0.0184	arg(g)/pi= -0.2558 +/- 0.0276
g_re= 0.0437 +/- 0.0265	g_re= -0.0952 +/- 0.0183	g_re= 0.0728 +/- 0.0115
g_im= 0.0641 +/- 0.0148	g_im= -0.1212 +/- 0.0186	g_im= -0.0755 +/- 0.0175
corr= [ 0.44]	corr= [ 0.79]	corr= [-0.66]

\*\*\*\*\*

JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[+] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.13782 +/- 0.028824)  
+ (i/2)\*(-0.00034183 +/- 0.017401) [ 0.29]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= 0.0001 +/- 0.0037	k_re= -0.0001 +/- 0.0041	k_re= 0.0040 +/- 0.0785
k_im= -0.0774 +/- 0.0128	k_im= 0.0682 +/- 0.0145	k_im= -0.0054 +/- 0.0915
corr= [-0.27]	corr= [-0.27]	corr= [ 0.66]
g = 0.0497 +/- 0.2531	g = 0.1663 +/- 0.5641	g = 0.0342 +/- 0.3945
arg(g)/pi= 0.0129 +/- 1.2138	arg(g)/pi= -0.9974 +/- 0.8351	arg(g)/pi= 0.0411 +/- 2.5557
g_re= 0.0496 +/- 0.2526	g_re= -0.1663 +/- 0.5639	g_re= 0.0340 +/- 0.3905
g_im= 0.0020 +/- 0.1901	g_im= -0.0013 +/- 0.4367	g_im= 0.0044 +/- 0.2806
corr= [ 0.08]	corr= [ 0.07]	corr= [ 0.16]

\*\*\*\*\*

JP=0+ || eta:eta/1^S\_0[-] kaon:kaon/1^S\_0[-] pi:pi/1^S\_0[-]

sqrt(s)\_pole = (0.11983 +/- 0.012464)  
+ (i/2)\*(+2.4122e-13 +/- 7.2004e-11) [ 0.03]

eta:eta/1^S_0	kaon:kaon/1^S_0	pi:pi/1^S_0
k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000	k_re= -0.0000 +/- 0.0000
k_im= -0.0846 +/- 0.0044	k_im= -0.0763 +/- 0.0049	k_im= -0.0343 +/- 0.0109
corr= [-0.03]	corr= [-0.03]	corr= [-0.03]
g = 0.0421 +/- 0.0105	g = 0.0123 +/- 0.0158	g = 0.0966 +/- 0.0116
arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= 0.5000 +/- 0.0000	arg(g)/pi= 0.5000 +/- 0.0000
g_re= 0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000	g_re= -0.0000 +/- 0.0000
g_im= 0.0421 +/- 0.0105	g_im= 0.0123 +/- 0.0158	g_im= 0.0966 +/- 0.0116
corr= [-1.00]	corr= [-0.96]	corr= [-0.17]

## $J^P = 2^+$ Amplitudes

### **K with two poles plus a polynomial**

All amplitudes are of the form

$$\mathbf{K}(s) = \frac{1}{m_0^2 - s} \begin{pmatrix} (g_{\pi\pi}^{(0)})^2 & g_{\pi\pi}^{(0)} g_{K\bar{K}}^{(0)} & g_{\pi\pi}^{(0)} g_{\eta\eta}^{(0)} \\ g_{\pi\pi}^{(0)} g_{K\bar{K}}^{(0)} & (g_{K\bar{K}}^{(0)})^2 & g_{K\bar{K}}^{(0)} g_{\eta\eta}^{(0)} \\ g_{\pi\pi}^{(0)} g_{\eta\eta}^{(0)} & g_{K\bar{K}}^{(0)} g_{\eta\eta}^{(0)} & (g_{\eta\eta}^{(0)})^2 \end{pmatrix} \\ + \frac{1}{m_1^2 - s} \begin{pmatrix} (g_{\pi\pi}^{(1)})^2 & g_{\pi\pi}^{(1)} g_{K\bar{K}}^{(1)} & g_{\pi\pi}^{(1)} g_{\eta\eta}^{(1)} \\ g_{\pi\pi}^{(1)} g_{K\bar{K}}^{(1)} & (g_{K\bar{K}}^{(1)})^2 & g_{K\bar{K}}^{(1)} g_{\eta\eta}^{(1)} \\ g_{\pi\pi}^{(1)} g_{\eta\eta}^{(1)} & g_{K\bar{K}}^{(1)} g_{\eta\eta}^{(1)} & (g_{\eta\eta}^{(1)})^2 \end{pmatrix} \\ + \begin{pmatrix} A(s) & B(s) & C(s) \\ B(s) & D(s) & E(s) \\ C(s) & E(s) & F(s) \end{pmatrix}$$

with row/column ordering  $\pi\pi, K\bar{K}, \eta\eta$ . The fit name will be something like `k_2poles_ABCDEF`, and the encoding of  $A \dots F$  indicates the order of the polynomial used in the relevant element, e.g.

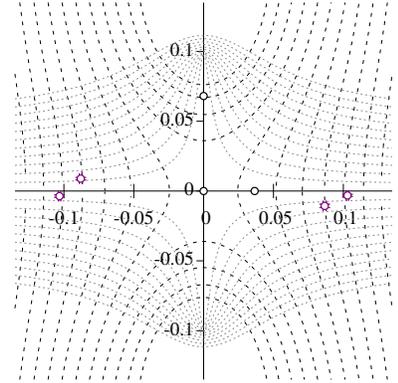
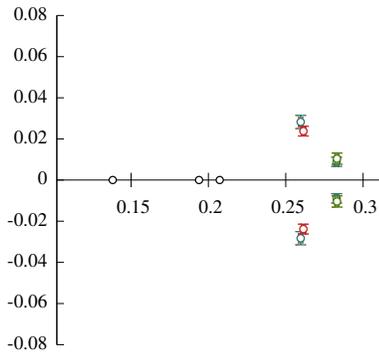
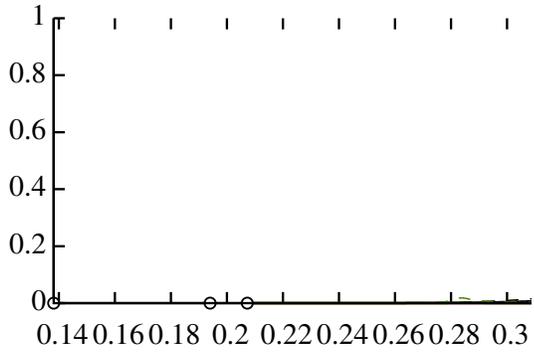
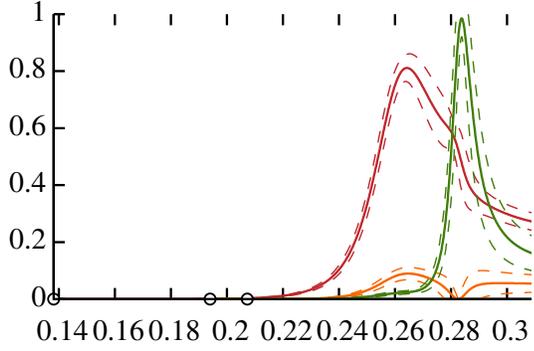
$$\begin{aligned} \text{A=x} &\implies A(s) = 0 \\ \text{A=c} &\implies A(s) = \text{const} \\ \text{A=l} &\implies A(s) = a + b s \\ \text{A=q} &\implies A(s) = a + b s + c s^2 \\ \text{A=s} &\implies A(s) = b s \end{aligned}$$

If the amplitude name features `_noCM`, the naive phase-space is used,  $I_{ij}(s) = -\rho_i(s)\delta_{ij}$ , otherwise the Chew-Mandelstam phase-space subtracted **at the position of the lower mass pole**,  $s = m_0^2$ .

If the amplitude name features `_free_geta`, the parameters  $g_{\eta\eta}^{(0,1)}$  are allowed to float freely in the fit, otherwise they are fixed to have value zero.

The parameter names should be self-explanatory. See the  $J^P = 0^+$  amplitudes file for more description.

# k\_2poles\_free\_geta\_xxxxxc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 28.87 / (34 - 9) = 1.15$

JP2+_g_eta:eta/1^D_2_pole0	-0.00019792 +/- 0.40532	1.00	-0.87	-0.01	0.00	0.00	-0.00	-0.02	0.00	-0.01
JP2+_g_eta:eta/1^D_2_pole1	0.00027393 +/- 0.69654	1.00	0.01	-0.00	-0.00	0.00	0.00	0.03	-0.00	0.01
JP2+_g_kaon:kaon/1^D_2_pole0	-1.0955 +/- 0.16061	1.00	0.10	-0.25	0.02	0.02	0.08	0.34		
JP2+_g_kaon:kaon/1^D_2_pole1	1.4953 +/- 0.24989	1.00	0.56	-0.83	0.15	0.48	0.54			
JP2+_g_pi:pi/1^D_2_pole0	1.8530 +/- 0.087712	1.00	-0.66	0.09	0.48	0.06				
JP2+_g_pi:pi/1^D_2_pole1	-0.11397 +/- 0.28848	1.00	-0.18	-0.57	-0.21					
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	40.539 +/- 24.384	1.00	-0.11	-0.07						
JP2+_m_pole0	0.26416 +/- 0.0016974	1.00	0.35							
JP2+_m_pole1	0.28405 +/- 0.0014766	1.00								
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0	FIXED								
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0	FIXED								
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	0.0000 +/- 0	FIXED								
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0	FIXED								
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0	FIXED								

## pole singularities

\*\*\*\*\*

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$\text{sqrt}(s)_{\text{pole}} = (0.26146 \pm 0.001358) + (i/2) * (-0.023807 \pm 0.0023733) [-0.36]$

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= -0.0801 +/- 0.0011	k_re= -0.0879 +/- 0.0010	k_re= 0.1111 +/- 0.0008			
k_im= 0.0097 +/- 0.0009	k_im= 0.0089 +/- 0.0009	k_im= -0.0070 +/- 0.0007			
corr= [-0.34]	corr= [-0.34]	corr= [-0.35]			
g = 0.0005 +/- 0.0062	g = 0.0315 +/- 0.0050	g = 0.0889 +/- 0.0041			
arg(g)/pi= -0.1300 +/- 0.1243	arg(g)/pi= -0.1117 +/- 0.0186	arg(g)/pi= -0.0794 +/- 0.0067			
g_re= 0.0004 +/- 0.0057	g_re= 0.0296 +/- 0.0049	g_re= 0.0862 +/- 0.0036			
g_im= -0.0002 +/- 0.0025	g_im= -0.0108 +/- 0.0020	g_im= -0.0220 +/- 0.0027			
corr= [-1.00]	corr= [-0.46]	corr= [-0.91]			

\*\*\*\*\*

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28309 \pm 0.0012704) + (i/2)*(-0.010429 \pm 0.0027248) [-0.63]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0964 +/- 0.0009	k_re= 0.1031 +/- 0.0009	k_re= -0.1236 +/- 0.0007
k_im= 0.0038 +/- 0.0010	k_im= -0.0036 +/- 0.0009	k_im= 0.0030 +/- 0.0008
corr= [-0.63]	corr= [-0.63]	corr= [-0.63]
g = 0.0012 +/- 0.0164	g = 0.0656 +/- 0.0089	g = 0.0160 +/- 0.0059
arg(g)/pi= -0.0722 +/- 0.1219	arg(g)/pi= -0.0614 +/- 0.0115	arg(g)/pi= -0.1999 +/- 0.2122
g_re= 0.0012 +/- 0.0160	g_re= 0.0644 +/- 0.0087	g_re= 0.0129 +/- 0.0107
g_im= -0.0003 +/- 0.0037	g_im= -0.0126 +/- 0.0031	g_im= -0.0094 +/- 0.0058
corr= [-0.99]	corr= [-0.61]	corr= [ 0.87]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.25964 \pm 0.0013419) + (i/2)*(-0.028243 \pm 0.0031933) [-0.21]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0787 +/- 0.0011	k_re= 0.0867 +/- 0.0010	k_re= 0.1100 +/- 0.0008
k_im= 0.0116 +/- 0.0013	k_im= -0.0106 +/- 0.0012	k_im= -0.0083 +/- 0.0009
corr= [-0.24]	corr= [-0.23]	corr= [-0.22]
g = 0.0005 +/- 0.0070	g = 0.0351 +/- 0.0058	g = 0.0854 +/- 0.0045
arg(g)/pi= -0.1256 +/- 0.2593	arg(g)/pi= -0.1086 +/- 0.0148	arg(g)/pi= -0.1019 +/- 0.0113
g_re= 0.0005 +/- 0.0064	g_re= 0.0330 +/- 0.0054	g_re= 0.0810 +/- 0.0034
g_im= -0.0002 +/- 0.0027	g_im= -0.0117 +/- 0.0026	g_im= -0.0269 +/- 0.0042
corr= [-0.99]	corr= [-0.75]	corr= [-0.91]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.28287 \pm 0.0012644) + (i/2)*(-0.0088895 \pm 0.0022755) [-0.14]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0963 +/- 0.0009	k_re= 0.1030 +/- 0.0009	k_re= 0.1234 +/- 0.0007
k_im= 0.0033 +/- 0.0008	k_im= -0.0031 +/- 0.0008	k_im= -0.0025 +/- 0.0007
corr= [-0.14]	corr= [-0.14]	corr= [-0.14]
g = 0.0011 +/- 0.0146	g = 0.0561 +/- 0.0068	g = 0.0161 +/- 0.0057
arg(g)/pi= -0.0778 +/- 0.2669	arg(g)/pi= -0.0740 +/- 0.0312	arg(g)/pi= 0.2833 +/- 0.1797
g_re= 0.0011 +/- 0.0142	g_re= 0.0546 +/- 0.0060	g_re= 0.0101 +/- 0.0043
g_im= -0.0003 +/- 0.0037	g_im= -0.0129 +/- 0.0064	g_im= 0.0125 +/- 0.0098
corr= [-0.97]	corr= [-0.62]	corr= [-0.79]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.26146 \pm 0.0013582) + (i/2)*(-0.023808 \pm 0.0023732) [-0.36]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0801 +/- 0.0011	k_re= -0.0879 +/- 0.0010	k_re= 0.1111 +/- 0.0008
k_im= -0.0097 +/- 0.0009	k_im= 0.0089 +/- 0.0009	k_im= -0.0070 +/- 0.0007
corr= [-0.34]	corr= [-0.34]	corr= [-0.35]
g = 0.0005 +/- 0.0063	g = 0.0315 +/- 0.0050	g = 0.0889 +/- 0.0041
arg(g)/pi= -0.1209 +/- 0.1244	arg(g)/pi= -0.1117 +/- 0.0186	arg(g)/pi= -0.0794 +/- 0.0067
g_re= 0.0004 +/- 0.0058	g_re= 0.0296 +/- 0.0049	g_re= 0.0862 +/- 0.0036
g_im= -0.0002 +/- 0.0023	g_im= -0.0108 +/- 0.0020	g_im= -0.0220 +/- 0.0027
corr= [-1.00]	corr= [-0.46]	corr= [-0.91]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28309 \pm 0.0012696) + (i/2)*(-0.01044 \pm 0.0027296) [-0.63]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0964 +/- 0.0009	k_re= 0.1031 +/- 0.0009	k_re= -0.1236 +/- 0.0007
k_im= -0.0038 +/- 0.0010	k_im= -0.0036 +/- 0.0009	k_im= 0.0030 +/- 0.0008
corr= [-0.63]	corr= [-0.63]	corr= [-0.63]
g = 0.0013 +/- 0.0166	g = 0.0656 +/- 0.0089	g = 0.0160 +/- 0.0058
arg(g)/pi= -0.0484 +/- 0.1229	arg(g)/pi= -0.0615 +/- 0.0117	arg(g)/pi= -0.2000 +/- 0.2122
g_re= 0.0013 +/- 0.0164	g_re= 0.0644 +/- 0.0087	g_re= 0.0129 +/- 0.0106
g_im= -0.0002 +/- 0.0026	g_im= -0.0126 +/- 0.0031	g_im= -0.0094 +/- 0.0059

corr= [-0.98] | corr= [-0.61] | corr= [ 0.87] |

\*\*\*\*\*

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.25964 +/- 0.0013421)  
+ (i/2)\*(-0.028244 +/- 0.003193) [-0.21]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0787 +/- 0.0011	k_re= 0.0867 +/- 0.0010	k_re= 0.1100 +/- 0.0008
k_im= -0.0116 +/- 0.0013	k_im= -0.0106 +/- 0.0012	k_im= -0.0083 +/- 0.0009
corr= [-0.24]	corr= [-0.23]	corr= [-0.22]
g = 0.0005 +/- 0.0071	g = 0.0351 +/- 0.0058	g = 0.0854 +/- 0.0045
arg(g)/pi= -0.1178 +/- 0.2593	arg(g)/pi= -0.1086 +/- 0.0148	arg(g)/pi= -0.1019 +/- 0.0113
g_re= 0.0005 +/- 0.0066	g_re= 0.0330 +/- 0.0054	g_re= 0.0810 +/- 0.0034
g_im= -0.0002 +/- 0.0026	g_im= -0.0117 +/- 0.0026	g_im= -0.0269 +/- 0.0042
corr= [-0.98]	corr= [-0.75]	corr= [-0.91]

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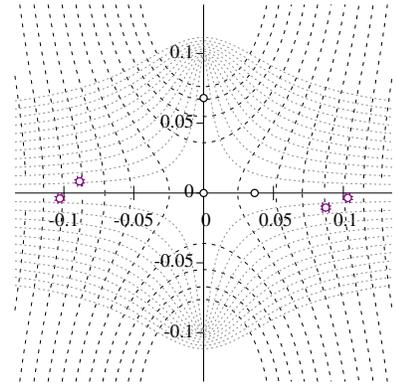
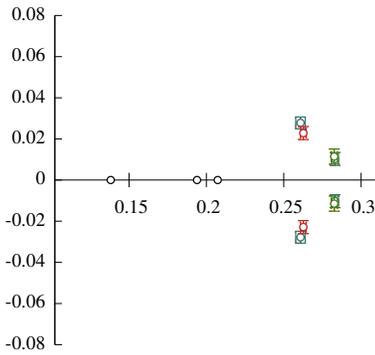
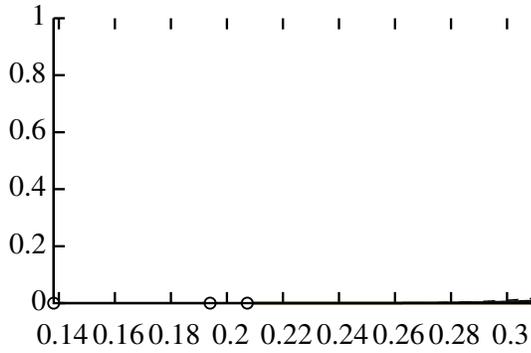
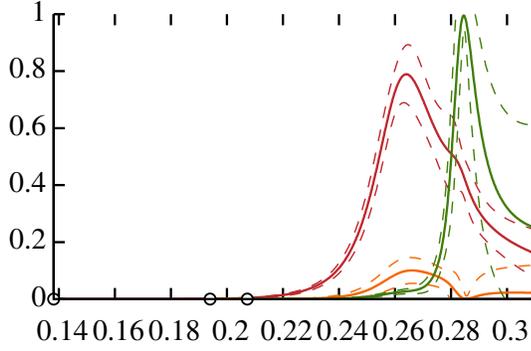
\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.28287 +/- 0.0012613)  
+ (i/2)\*(-0.0088982 +/- 0.0022775) [-0.15]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0963 +/- 0.0009	k_re= 0.1030 +/- 0.0009	k_re= 0.1234 +/- 0.0007
k_im= -0.0033 +/- 0.0008	k_im= -0.0031 +/- 0.0008	k_im= -0.0025 +/- 0.0007
corr= [-0.14]	corr= [-0.15]	corr= [-0.15]
g = 0.0011 +/- 0.0148	g = 0.0561 +/- 0.0068	g = 0.0161 +/- 0.0057
arg(g)/pi= -0.0541 +/- 0.2680	arg(g)/pi= -0.0741 +/- 0.0311	arg(g)/pi= 0.2832 +/- 0.1798
g_re= 0.0011 +/- 0.0146	g_re= 0.0546 +/- 0.0060	g_re= 0.0101 +/- 0.0043
g_im= -0.0002 +/- 0.0027	g_im= -0.0129 +/- 0.0064	g_im= 0.0125 +/- 0.0098
corr= [-0.94]	corr= [-0.63]	corr= [-0.79]

\*\*\*\*\*

# k\_2poles\_ccxcxc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 26.71 / (34 - 10) = 1.11$

JP2+_g_kaon:kaon/1^D_2_pole0	-1.1208 +/- 0.34446	1.00	-0.66	-0.47	0.56	0.19	0.87	-0.36	0.57	0.42	0.27
JP2+_g_kaon:kaon/1^D_2_pole1	1.5515 +/- 0.36012	1.00	0.46	-0.62	-0.08	-0.79	0.24	-0.40	-0.10	-0.10	0.19
JP2+_g_pi:pi/1^D_2_pole0	1.7740 +/- 0.13193	1.00	-0.85	-0.10	-0.50	0.75	-0.71	-0.06	-0.35		
JP2+_g_pi:pi/1^D_2_pole1	0.057191 +/- 0.34576	1.00	0.09	0.63	-0.76	0.72	0.05	0.33			
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	43.192 +/- 24.994	1.00	0.20	-0.14	0.22	-0.05	-0.05				
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	-22.072 +/- 147.05	1.00	-0.49	0.65	0.36	0.13					
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	-18.908 +/- 83.496	1.00	-0.70	-0.15	-0.34						
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	32.628 +/- 32.61	1.00	0.34	0.29							
JP2+_m_pole0	0.26423 +/- 0.0015839								1.00	0.30	
JP2+_m_pole1	0.28444 +/- 0.0016372									1.00	
JP2+_g_eta:eta/1^D_2_pole0	0.0000 +/- 0										FIXED
JP2+_g_eta:eta/1^D_2_pole1	0.0000 +/- 0										FIXED
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0										FIXED
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0										FIXED

## pole singularities

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\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$\text{sqrt}(s)_{\text{pole}} = (0.26264 \pm 0.0018486) + (i/2) * (-0.022833 \pm 0.0031726) [-0.04]$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0810 +/- 0.0015	k_re= -0.0888 +/- 0.0014	k_re= 0.1118 +/- 0.0011
k_im= 0.0093 +/- 0.0013	k_im= 0.0084 +/- 0.0012	k_im= -0.0067 +/- 0.0009
corr= [-0.01]	corr= [-0.02]	corr= [-0.03]
g = 0.0000 +/- 0.0000	g = 0.0323 +/- 0.0112	g = 0.0893 +/- 0.0052
arg(g)/pi= -0.0735 +/- 0.0671	arg(g)/pi= -0.1044 +/- 0.0679	arg(g)/pi= -0.0580 +/- 0.0204
g_re= 0.0000 +/- 0.0000	g_re= 0.0306 +/- 0.0108	g_re= 0.0878 +/- 0.0047
g_im= -0.0000 +/- 0.0000	g_im= -0.0104 +/- 0.0074	g_im= -0.0162 +/- 0.0061
corr= [-0.31]	corr= [-0.28]	corr= [-0.42]

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\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28268 \pm 0.0020707) + (i/2)*(-0.011432 \pm 0.0036848) [0.43]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0962 +/- 0.0015	k_re= 0.1029 +/- 0.0014	k_re= -0.1233 +/- 0.0012
k_im= 0.0042 +/- 0.0014	k_im= -0.0039 +/- 0.0013	k_im= 0.0033 +/- 0.0011
corr= [0.43]	corr= [0.43]	corr= [0.43]
g = 0.0000 +/- 0.0000	g = 0.0682 +/- 0.0097	g = 0.0149 +/- 0.0103
arg(g)/pi= -0.0342 +/- 0.0811	arg(g)/pi= -0.0876 +/- 0.0728	arg(g)/pi= -0.3799 +/- 0.3047
g_re= 0.0000 +/- 0.0000	g_re= 0.0656 +/- 0.0070	g_re= 0.0055 +/- 0.0163
g_im= -0.0000 +/- 0.0000	g_im= -0.0185 +/- 0.0170	g_im= -0.0139 +/- 0.0068
corr= [-0.03]	corr= [-0.46]	corr= [-0.41]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.26082 \pm 0.0030935) + (i/2)*(-0.027786 \pm 0.0028664) [0.30]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0797 +/- 0.0025	k_re= 0.0875 +/- 0.0023	k_re= 0.1107 +/- 0.0018
k_im= 0.0114 +/- 0.0012	k_im= -0.0104 +/- 0.0011	k_im= -0.0082 +/- 0.0009
corr= [0.42]	corr= [0.39]	corr= [0.33]
g = 0.0000 +/- 0.0000	g = 0.0366 +/- 0.0096	g = 0.0859 +/- 0.0054
arg(g)/pi= -0.0912 +/- 0.0732	arg(g)/pi= -0.1016 +/- 0.0946	arg(g)/pi= -0.0797 +/- 0.0350
g_re= 0.0000 +/- 0.0000	g_re= 0.0348 +/- 0.0088	g_re= 0.0832 +/- 0.0067
g_im= -0.0000 +/- 0.0000	g_im= -0.0115 +/- 0.0116	g_im= -0.0213 +/- 0.0086
corr= [-0.26]	corr= [-0.17]	corr= [0.64]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.28316 \pm 0.0021912) + (i/2)*(-0.010237 \pm 0.0031496) [-0.11]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0965 +/- 0.0016	k_re= 0.1032 +/- 0.0015	k_re= 0.1236 +/- 0.0013
k_im= 0.0038 +/- 0.0012	k_im= -0.0035 +/- 0.0011	k_im= -0.0029 +/- 0.0009
corr= [-0.10]	corr= [-0.10]	corr= [-0.11]
g = 0.0000 +/- 0.0000	g = 0.0599 +/- 0.0101	g = 0.0163 +/- 0.0084
arg(g)/pi= -0.0313 +/- 0.0809	arg(g)/pi= -0.0825 +/- 0.0804	arg(g)/pi= 0.1629 +/- 0.2463
g_re= 0.0000 +/- 0.0000	g_re= 0.0579 +/- 0.0104	g_re= 0.0142 +/- 0.0058
g_im= -0.0000 +/- 0.0000	g_im= -0.0153 +/- 0.0149	g_im= 0.0080 +/- 0.0140
corr= [-0.12]	corr= [0.17]	corr= [-0.03]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.26264 \pm 0.0018486) + (i/2)*(-0.022833 \pm 0.0031726) [-0.04]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0810 +/- 0.0015	k_re= -0.0888 +/- 0.0014	k_re= 0.1118 +/- 0.0011
k_im= -0.0093 +/- 0.0013	k_im= 0.0084 +/- 0.0012	k_im= -0.0067 +/- 0.0009
corr= [-0.01]	corr= [-0.02]	corr= [-0.03]
g = 0.0000 +/- 0.0000	g = 0.0323 +/- 0.0112	g = 0.0893 +/- 0.0052
arg(g)/pi= -0.0682 +/- 0.0732	arg(g)/pi= -0.1044 +/- 0.0679	arg(g)/pi= -0.0580 +/- 0.0204
g_re= 0.0000 +/- 0.0000	g_re= 0.0306 +/- 0.0108	g_re= 0.0878 +/- 0.0047
g_im= -0.0000 +/- 0.0000	g_im= -0.0104 +/- 0.0074	g_im= -0.0162 +/- 0.0061
corr= [-0.17]	corr= [-0.28]	corr= [-0.42]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28268 \pm 0.0020707) + (i/2)*(-0.011432 \pm 0.0036848) [0.43]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0962 +/- 0.0015	k_re= 0.1029 +/- 0.0014	k_re= -0.1233 +/- 0.0012
k_im= -0.0042 +/- 0.0014	k_im= -0.0039 +/- 0.0013	k_im= 0.0033 +/- 0.0011
corr= [0.43]	corr= [0.43]	corr= [0.43]
g = 0.0000 +/- 0.0000	g = 0.0682 +/- 0.0097	g = 0.0149 +/- 0.0103
arg(g)/pi= -0.0212 +/- 0.0807	arg(g)/pi= -0.0876 +/- 0.0728	arg(g)/pi= -0.3799 +/- 0.3047
g_re= 0.0000 +/- 0.0000	g_re= 0.0656 +/- 0.0070	g_re= 0.0055 +/- 0.0163
g_im= -0.0000 +/- 0.0000	g_im= -0.0185 +/- 0.0170	g_im= -0.0139 +/- 0.0068

```

corr= [ 0.01] | corr= [-0.46] | corr= [-0.41] |
*****

```

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*****
JP=2+ || eta:eta/1^D_2[-] kaon:kaon/1^D_2[-] pi:pi/1^D_2[-]

```

```

sqrt(s)_pole = (0.26082 +/- 0.0030935)
               + (i/2)*(-0.027786 +/- 0.0028664) [ 0.30]

```

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= 0.0797 +/- 0.0025		k_re= 0.0875 +/- 0.0023		k_re= 0.1107 +/- 0.0018	
k_im= -0.0114 +/- 0.0012		k_im= -0.0104 +/- 0.0011		k_im= -0.0082 +/- 0.0009	
corr= [ 0.42]		corr= [ 0.39]		corr= [ 0.33]	
-----		-----		-----	
g = 0.0000 +/- 0.0000		g = 0.0366 +/- 0.0096		g = 0.0859 +/- 0.0054	
arg(g)/pi= -0.0865 +/- 0.0727		arg(g)/pi= -0.1016 +/- 0.0946		arg(g)/pi= -0.0797 +/- 0.0350	
-----		-----		-----	
g_re= 0.0000 +/- 0.0000		g_re= 0.0348 +/- 0.0088		g_re= 0.0832 +/- 0.0067	
g_im= -0.0000 +/- 0.0000		g_im= -0.0115 +/- 0.0116		g_im= -0.0213 +/- 0.0086	
corr= [-0.20]		corr= [-0.17]		corr= [ 0.64]	

```

*****
JP=2+ || eta:eta/1^D_2[-] kaon:kaon/1^D_2[-] pi:pi/1^D_2[-]

```

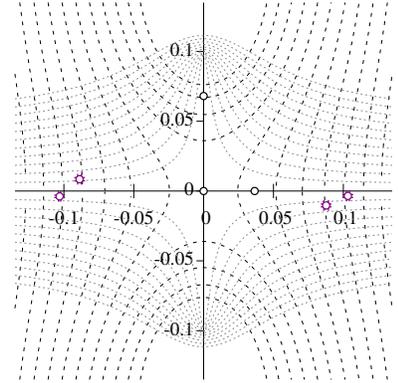
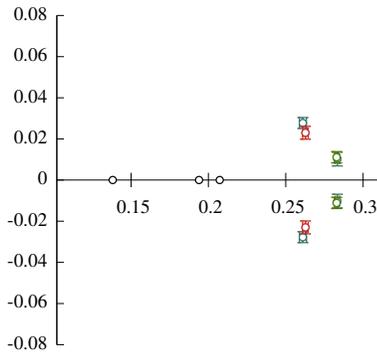
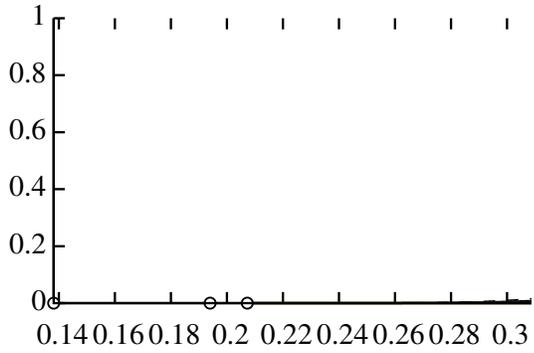
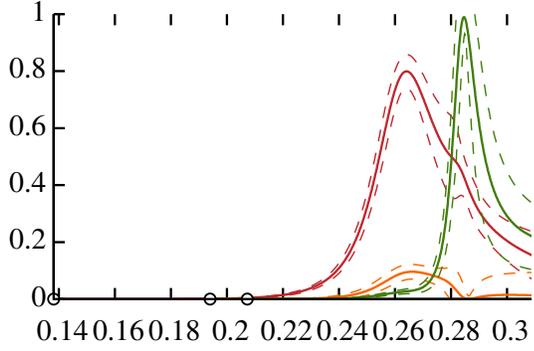
```

sqrt(s)_pole = (0.28316 +/- 0.0021912)
               + (i/2)*(-0.010237 +/- 0.0031496) [-0.11]

```

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= 0.0965 +/- 0.0016		k_re= 0.1032 +/- 0.0015		k_re= 0.1236 +/- 0.0013	
k_im= -0.0038 +/- 0.0012		k_im= -0.0035 +/- 0.0011		k_im= -0.0029 +/- 0.0009	
corr= [-0.10]		corr= [-0.10]		corr= [-0.11]	
-----		-----		-----	
g = 0.0000 +/- 0.0000		g = 0.0599 +/- 0.0101		g = 0.0163 +/- 0.0084	
arg(g)/pi= -0.0181 +/- 0.0779		arg(g)/pi= -0.0825 +/- 0.0804		arg(g)/pi= 0.1629 +/- 0.2463	
-----		-----		-----	
g_re= 0.0000 +/- 0.0000		g_re= 0.0579 +/- 0.0104		g_re= 0.0142 +/- 0.0058	
g_im= -0.0000 +/- 0.0000		g_im= -0.0153 +/- 0.0149		g_im= 0.0080 +/- 0.0140	
corr= [-0.11]		corr= [ 0.17]		corr= [-0.03]	

# k\_2poles\_ccxxxxc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 26.78 / (34 - 9) = 1.07$

JP2+_g_kaon:kaon/1^D_2_pole0	-1.0529 +/- 0.16447	1.00	0.12	-0.11	0.10	0.03	0.09	0.02	0.18	0.32
JP2+_g_kaon:kaon/1^D_2_pole1	1.4686 +/- 0.20231	1.00	0.07	-0.13	0.12	-0.32	0.30	0.33	0.42	
JP2+_g_pi:pi/1^D_2_pole0	1.7166 +/- 0.11215		1.00	-0.83	-0.02	0.70	-0.56	0.14	-0.42	
JP2+_g_pi:pi/1^D_2_pole1	0.11305 +/- 0.27831			1.00	-0.01	-0.74	0.54	-0.19	0.44	
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	43.771 +/- 24.732				1.00	-0.06	0.12	-0.16	-0.08	
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	-26.651 +/- 78.806					1.00	-0.57	0.01	-0.39	
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	37.369 +/- 22.564						1.00	0.20	0.31	
JP2+_m_pole0	0.26430 +/- 0.0015557							1.00	0.27	
JP2+_m_pole1	0.28393 +/- 0.0015843								1.00	
JP2+_g_eta:eta/1^D_2_pole0	0.0000 +/- 0									FIXED
JP2+_g_eta:eta/1^D_2_pole1	0.0000 +/- 0									FIXED
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0									FIXED
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0									FIXED
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	0.0000 +/- 0									FIXED

## pole singularities

\*\*\*\*\*

JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$\text{sqrt}(s)_{\text{pole}} = (0.26273 \pm 0.001749) + (i/2) * (-0.022984 \pm 0.003121)$  [ 0.08]

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= -0.0811 +/- 0.0014	k_re= -0.0888 +/- 0.0013	k_re= 0.1118 +/- 0.0010			
k_im= 0.0093 +/- 0.0013	k_im= 0.0085 +/- 0.0012	k_im= -0.0068 +/- 0.0009			
corr= [ 0.09]	corr= [ 0.09]	corr= [ 0.08]			
g = 0.0000 +/- 0.0000	g = 0.0312 +/- 0.0056	g = 0.0895 +/- 0.0050			
arg(g)/pi= -0.0743 +/- 0.0739	arg(g)/pi= -0.1040 +/- 0.0739	arg(g)/pi= -0.0571 +/- 0.0196			
g_re= 0.0000 +/- 0.0000	g_re= 0.0296 +/- 0.0062	g_re= 0.0880 +/- 0.0047			
g_im= -0.0000 +/- 0.0000	g_im= -0.0100 +/- 0.0068	g_im= -0.0160 +/- 0.0058			
corr= [-0.20]	corr= [ 0.28]	corr= [-0.33]			

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

sqrt(s)\_pole = (0.28287 +/- 0.0011991)  
 + (i/2)\*(-0.011107 +/- 0.0027016) [-0.31]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0963 +/- 0.0009	k_re= 0.1030 +/- 0.0008	k_re= -0.1234 +/- 0.0007
k_im= 0.0041 +/- 0.0010	k_im= -0.0038 +/- 0.0009	k_im= 0.0032 +/- 0.0008
corr= [-0.32]	corr= [-0.32]	corr= [-0.32]
g = 0.0000 +/- 0.0000	g = 0.0673 +/- 0.0071	g = 0.0140 +/- 0.0059
arg(g)/pi= -0.0330 +/- 0.0827	arg(g)/pi= -0.0804 +/- 0.0233	arg(g)/pi= -0.4088 +/- 0.3455
g_re= 0.0000 +/- 0.0000	g_re= 0.0652 +/- 0.0065	g_re= 0.0039 +/- 0.0156
g_im= -0.0000 +/- 0.0000	g_im= -0.0168 +/- 0.0057	g_im= -0.0134 +/- 0.0047
corr= [-0.11]	corr= [-0.51]	corr= [ 0.12]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.26107 +/- 0.0022563)  
 + (i/2)\*(-0.027732 +/- 0.0026733) [ 0.06]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0799 +/- 0.0018	k_re= 0.0877 +/- 0.0017	k_re= 0.1109 +/- 0.0013
k_im= 0.0113 +/- 0.0011	k_im= -0.0103 +/- 0.0010	k_im= -0.0082 +/- 0.0008
corr= [ 0.16]	corr= [ 0.13]	corr= [ 0.09]
g = 0.0000 +/- 0.0000	g = 0.0358 +/- 0.0071	g = 0.0866 +/- 0.0044
arg(g)/pi= -0.0900 +/- 0.0749	arg(g)/pi= -0.0946 +/- 0.0747	arg(g)/pi= -0.0770 +/- 0.0269
g_re= 0.0000 +/- 0.0000	g_re= 0.0342 +/- 0.0081	g_re= 0.0840 +/- 0.0050
g_im= -0.0000 +/- 0.0000	g_im= -0.0105 +/- 0.0074	g_im= -0.0207 +/- 0.0070
corr= [-0.18]	corr= [ 0.44]	corr= [ 0.41]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.28337 +/- 0.0014723)  
 + (i/2)\*(-0.010207 +/- 0.0033368) [-0.48]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0966 +/- 0.0011	k_re= 0.1033 +/- 0.0010	k_re= 0.1237 +/- 0.0008
k_im= 0.0037 +/- 0.0012	k_im= -0.0035 +/- 0.0011	k_im= -0.0029 +/- 0.0010
corr= [-0.48]	corr= [-0.48]	corr= [-0.48]
g = 0.0000 +/- 0.0000	g = 0.0601 +/- 0.0105	g = 0.0155 +/- 0.0042
arg(g)/pi= -0.0308 +/- 0.0771	arg(g)/pi= -0.0739 +/- 0.0294	arg(g)/pi= 0.1397 +/- 0.2905
g_re= 0.0000 +/- 0.0000	g_re= 0.0585 +/- 0.0094	g_re= 0.0141 +/- 0.0055
g_im= -0.0000 +/- 0.0000	g_im= -0.0138 +/- 0.0073	g_im= 0.0066 +/- 0.0137
corr= [-0.09]	corr= [-0.80]	corr= [-0.70]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.26273 +/- 0.001749)  
 + (i/2)\*(-0.022984 +/- 0.003121) [ 0.08]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0811 +/- 0.0014	k_re= -0.0888 +/- 0.0013	k_re= 0.1118 +/- 0.0010
k_im= -0.0093 +/- 0.0013	k_im= 0.0085 +/- 0.0012	k_im= -0.0068 +/- 0.0009
corr= [ 0.09]	corr= [ 0.09]	corr= [ 0.08]
g = 0.0000 +/- 0.0000	g = 0.0312 +/- 0.0056	g = 0.0895 +/- 0.0050
arg(g)/pi= -0.0682 +/- 0.0733	arg(g)/pi= -0.1040 +/- 0.0739	arg(g)/pi= -0.0571 +/- 0.0196
g_re= 0.0000 +/- 0.0000	g_re= 0.0296 +/- 0.0062	g_re= 0.0880 +/- 0.0047
g_im= -0.0000 +/- 0.0000	g_im= -0.0100 +/- 0.0068	g_im= -0.0160 +/- 0.0058
corr= [-0.16]	corr= [ 0.28]	corr= [-0.33]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

sqrt(s)\_pole = (0.28287 +/- 0.0011991)  
 + (i/2)\*(-0.011107 +/- 0.0027016) [-0.31]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0963 +/- 0.0009	k_re= 0.1030 +/- 0.0008	k_re= -0.1234 +/- 0.0007
k_im= -0.0041 +/- 0.0010	k_im= -0.0038 +/- 0.0009	k_im= 0.0032 +/- 0.0008
corr= [-0.32]	corr= [-0.32]	corr= [-0.32]
g = 0.0000 +/- 0.0000	g = 0.0673 +/- 0.0071	g = 0.0140 +/- 0.0059
arg(g)/pi= -0.0197 +/- 0.0816	arg(g)/pi= -0.0804 +/- 0.0233	arg(g)/pi= -0.4088 +/- 0.3455
g_re= 0.0000 +/- 0.0000	g_re= 0.0652 +/- 0.0065	g_re= 0.0039 +/- 0.0156
g_im= -0.0000 +/- 0.0000	g_im= -0.0168 +/- 0.0057	g_im= -0.0134 +/- 0.0047

corr= [-0.04] | corr= [-0.51] | corr= [ 0.12] |

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JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.26107 +/- 0.0022563)  
+ (i/2)\*(-0.027732 +/- 0.0026733) [ 0.06]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0799 +/- 0.0018	k_re= 0.0877 +/- 0.0017	k_re= 0.1109 +/- 0.0013
k_im= -0.0113 +/- 0.0011	k_im= -0.0103 +/- 0.0010	k_im= -0.0082 +/- 0.0008
corr= [ 0.16]	corr= [ 0.13]	corr= [ 0.09]
g = 0.0000 +/- 0.0000	g = 0.0358 +/- 0.0071	g = 0.0866 +/- 0.0044
arg(g)/pi= -0.0853 +/- 0.0786	arg(g)/pi= -0.0946 +/- 0.0747	arg(g)/pi= -0.0770 +/- 0.0269
g_re= 0.0000 +/- 0.0000	g_re= 0.0342 +/- 0.0081	g_re= 0.0840 +/- 0.0050
g_im= -0.0000 +/- 0.0000	g_im= -0.0105 +/- 0.0074	g_im= -0.0207 +/- 0.0070
corr= [-0.14]	corr= [ 0.44]	corr= [ 0.41]

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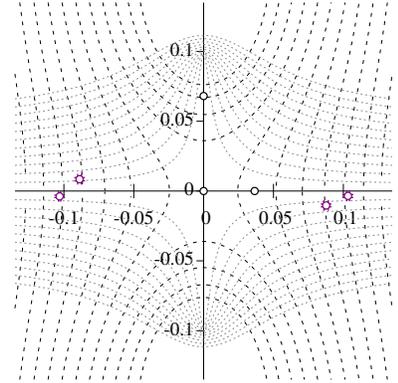
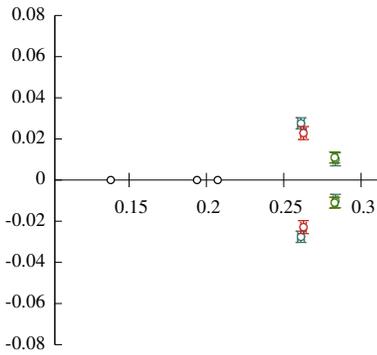
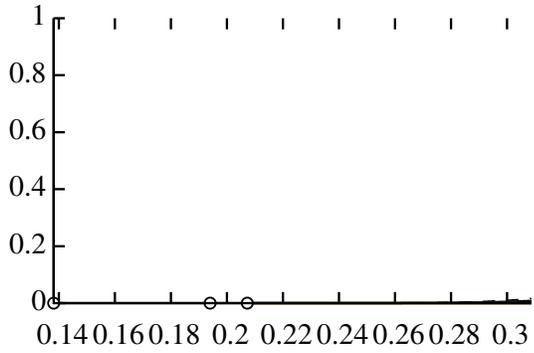
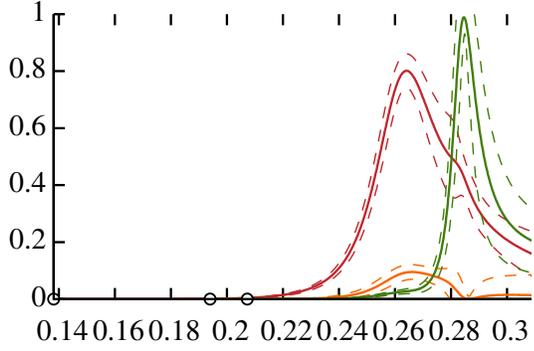
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JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.28337 +/- 0.0014723)  
+ (i/2)\*(-0.010207 +/- 0.0033368) [-0.48]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0966 +/- 0.0011	k_re= 0.1033 +/- 0.0010	k_re= 0.1237 +/- 0.0008
k_im= -0.0037 +/- 0.0012	k_im= -0.0035 +/- 0.0011	k_im= -0.0029 +/- 0.0010
corr= [-0.48]	corr= [-0.48]	corr= [-0.48]
g = 0.0000 +/- 0.0000	g = 0.0601 +/- 0.0105	g = 0.0155 +/- 0.0042
arg(g)/pi= -0.0177 +/- 0.0800	arg(g)/pi= -0.0739 +/- 0.0294	arg(g)/pi= 0.1397 +/- 0.2905
g_re= 0.0000 +/- 0.0000	g_re= 0.0585 +/- 0.0094	g_re= 0.0141 +/- 0.0055
g_im= -0.0000 +/- 0.0000	g_im= -0.0138 +/- 0.0073	g_im= 0.0066 +/- 0.0137
corr= [ 0.01]	corr= [-0.80]	corr= [-0.70]

\*\*\*\*\*

# k\_2poles\_ccxxxc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 26.74 / (34 - 9) = 1.07$

JP2+_g_kaon:kaon/1^D_2_pole0	-1.0758 +/- 0.16999	1.00	0.09	-0.11	0.08	0.03	0.13	-0.00	0.15	0.30
JP2+_g_kaon:kaon/1^D_2_pole1	1.5063 +/- 0.21767	1.00	0.08	-0.16	0.12	-0.32	0.29	0.32	0.47	
JP2+_g_pi:pi/1^D_2_pole0	1.7633 +/- 0.11909		1.00	-0.83	-0.03	0.68	-0.57	0.20	-0.39	
JP2+_g_pi:pi/1^D_2_pole1	0.093150 +/- 0.29663			1.00	-0.01	-0.72	0.53	-0.26	0.41	
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	44.099 +/- 24.621				1.00	-0.06	0.12	-0.17	-0.07	
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	-25.264 +/- 81.025					1.00	-0.57	0.06	-0.39	
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	35.810 +/- 24.465						1.00	0.16	0.32	
JP2+_m_pole0	0.26429 +/- 0.001616							1.00	0.23	
JP2+_m_pole1	0.28446 +/- 0.0016883								1.00	
JP2+_g_eta:eta/1^D_2_pole0	0.0000 +/- 0									FIXED
JP2+_g_eta:eta/1^D_2_pole1	0.0000 +/- 0									FIXED
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0									FIXED
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0									FIXED
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	0.0000 +/- 0									FIXED

## pole singularities

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JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$\text{sqrt}(s)_{\text{pole}} = (0.26274 \pm 0.0017397) + (i/2) * (-0.022869 \pm 0.0031683) [0.01]$

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= -0.0811 +/- 0.0014	k_re= -0.0888 +/- 0.0013	k_re= 0.1118 +/- 0.0010			
k_im= 0.0093 +/- 0.0013	k_im= 0.0085 +/- 0.0012	k_im= -0.0067 +/- 0.0009			
corr= [ 0.02]	corr= [ 0.02]	corr= [ 0.01]			
g = 0.0000 +/- nan	g = 0.0309 +/- 0.0056	g = 0.0891 +/- 0.0052			
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.1035 +/- 0.0710	arg(g)/pi= 0.9435 +/- 0.0185			
g_re= 0.0000 +/- 0.0000	g_re= 0.0293 +/- 0.0062	g_re= -0.0877 +/- 0.0048			
g_im= 0.0000 +/- 0.0000	g_im= -0.0099 +/- 0.0064	g_im= 0.0157 +/- 0.0055			
corr= [ 0.00]	corr= [ 0.28]	corr= [-0.37]			

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JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

sqrt(s)\_pole = (0.28292 +/- 0.0012016)  
+ (i/2)\*(-0.010998 +/- 0.0026855) [-0.34]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0963 +/- 0.0009	k_re= 0.1030 +/- 0.0008	k_re= -0.1235 +/- 0.0007
k_im= 0.0040 +/- 0.0010	k_im= -0.0038 +/- 0.0009	k_im= 0.0032 +/- 0.0008
corr= [-0.34]	corr= [-0.34]	corr= [-0.34]
g = 0.0000 +/- nan	g = 0.0671 +/- 0.0071	g = 0.0138 +/- 0.0052
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.0775 +/- 0.0237	arg(g)/pi= 0.5891 +/- 0.3345
g_re= 0.0000 +/- 0.0000	g_re= 0.0651 +/- 0.0065	g_re= -0.0038 +/- 0.0147
g_im= 0.0000 +/- 0.0000	g_im= -0.0162 +/- 0.0058	g_im= 0.0132 +/- 0.0046
corr= [ 0.00]	corr= [-0.49]	corr= [ 0.24]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.28341 +/- 0.0014498)  
+ (i/2)\*(-0.010131 +/- 0.0032175) [-0.47]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0967 +/- 0.0011	k_re= 0.1034 +/- 0.0010	k_re= 0.1237 +/- 0.0008
k_im= 0.0037 +/- 0.0012	k_im= -0.0035 +/- 0.0011	k_im= -0.0029 +/- 0.0009
corr= [-0.47]	corr= [-0.47]	corr= [-0.47]
g = 0.0000 +/- nan	g = 0.0600 +/- 0.0102	g = 0.0153 +/- 0.0039
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.0709 +/- 0.0291	arg(g)/pi= 0.1392 +/- 0.2814
g_re= 0.0000 +/- 0.0000	g_re= 0.0586 +/- 0.0091	g_re= 0.0139 +/- 0.0056
g_im= 0.0000 +/- 0.0000	g_im= -0.0133 +/- 0.0071	g_im= 0.0065 +/- 0.0129
corr= [ 0.00]	corr= [-0.80]	corr= [-0.73]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.26113 +/- 0.0021345)  
+ (i/2)\*(-0.027569 +/- 0.0027357) [ 0.06]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0799 +/- 0.0017	k_re= 0.0877 +/- 0.0016	k_re= 0.1109 +/- 0.0013
k_im= 0.0113 +/- 0.0011	k_im= -0.0103 +/- 0.0010	k_im= -0.0081 +/- 0.0008
corr= [ 0.14]	corr= [ 0.12]	corr= [ 0.08]
g = 0.0000 +/- nan	g = 0.0355 +/- 0.0070	g = 0.0863 +/- 0.0042
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.0917 +/- 0.0715	arg(g)/pi= 0.9242 +/- 0.0256
g_re= 0.0000 +/- 0.0000	g_re= 0.0341 +/- 0.0079	g_re= -0.0839 +/- 0.0044
g_im= 0.0000 +/- 0.0000	g_im= -0.0101 +/- 0.0071	g_im= 0.0204 +/- 0.0068
corr= [ 0.00]	corr= [ 0.41]	corr= [ 0.27]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.26274 +/- 0.0017397)  
+ (i/2)\*(-0.022869 +/- 0.0031683) [ 0.01]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0811 +/- 0.0014	k_re= -0.0888 +/- 0.0013	k_re= 0.1118 +/- 0.0010
k_im= -0.0093 +/- 0.0013	k_im= 0.0085 +/- 0.0012	k_im= -0.0067 +/- 0.0009
corr= [ 0.02]	corr= [ 0.02]	corr= [ 0.01]
g = 0.0000 +/- nan	g = 0.0309 +/- 0.0056	g = 0.0891 +/- 0.0052
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.1035 +/- 0.0710	arg(g)/pi= 0.9435 +/- 0.0185
g_re= 0.0000 +/- 0.0000	g_re= 0.0293 +/- 0.0062	g_re= -0.0877 +/- 0.0048
g_im= 0.0000 +/- 0.0000	g_im= -0.0099 +/- 0.0064	g_im= 0.0157 +/- 0.0055
corr= [ 0.00]	corr= [ 0.28]	corr= [-0.37]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

sqrt(s)\_pole = (0.28292 +/- 0.0012016)  
+ (i/2)\*(-0.010998 +/- 0.0026855) [-0.34]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0963 +/- 0.0009	k_re= 0.1030 +/- 0.0008	k_re= -0.1235 +/- 0.0007
k_im= -0.0040 +/- 0.0010	k_im= -0.0038 +/- 0.0009	k_im= 0.0032 +/- 0.0008
corr= [-0.34]	corr= [-0.34]	corr= [-0.34]
g = 0.0000 +/- nan	g = 0.0671 +/- 0.0071	g = 0.0138 +/- 0.0052
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.0775 +/- 0.0237	arg(g)/pi= 0.5891 +/- 0.3345
g_re= 0.0000 +/- 0.0000	g_re= 0.0651 +/- 0.0065	g_re= -0.0038 +/- 0.0147
g_im= 0.0000 +/- 0.0000	g_im= -0.0162 +/- 0.0058	g_im= 0.0132 +/- 0.0046

corr= [ 0.00] | corr= [-0.49] | corr= [ 0.24] |

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\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.28341 +/- 0.0014498)  
+ (i/2)\*(-0.010131 +/- 0.0032175) [-0.47]

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= 0.0967 +/- 0.0011		k_re= 0.1034 +/- 0.0010		k_re= 0.1237 +/- 0.0008	
k_im= -0.0037 +/- 0.0012		k_im= -0.0035 +/- 0.0011		k_im= -0.0029 +/- 0.0009	
corr= [-0.47]		corr= [-0.47]		corr= [-0.47]	
-----					
g = 0.0000 +/- nan		g = 0.0600 +/- 0.0102		g = 0.0153 +/- 0.0039	
arg(g)/pi= 0.0000 +/- nan		arg(g)/pi= -0.0709 +/- 0.0291		arg(g)/pi= 0.1392 +/- 0.2814	
-----					
g_re= 0.0000 +/- 0.0000		g_re= 0.0586 +/- 0.0091		g_re= 0.0139 +/- 0.0056	
g_im= 0.0000 +/- 0.0000		g_im= -0.0133 +/- 0.0071		g_im= 0.0065 +/- 0.0129	
corr= [ 0.00]		corr= [-0.80]		corr= [-0.73]	

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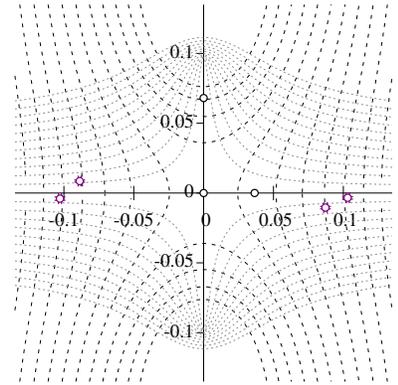
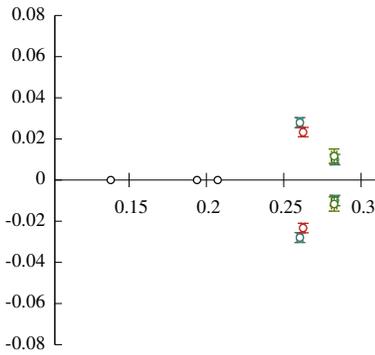
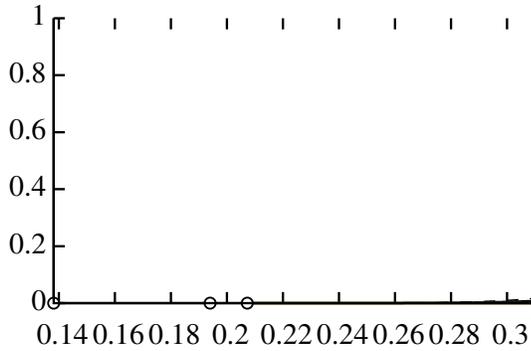
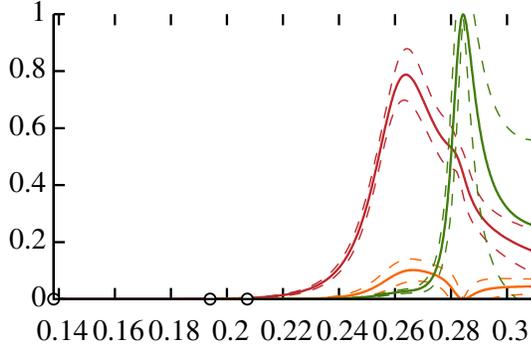
\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.26113 +/- 0.0021345)  
+ (i/2)\*(-0.027569 +/- 0.0027357) [ 0.06]

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= 0.0799 +/- 0.0017		k_re= 0.0877 +/- 0.0016		k_re= 0.1109 +/- 0.0013	
k_im= -0.0113 +/- 0.0011		k_im= -0.0103 +/- 0.0010		k_im= -0.0081 +/- 0.0008	
corr= [ 0.14]		corr= [ 0.12]		corr= [ 0.08]	
-----					
g = 0.0000 +/- nan		g = 0.0355 +/- 0.0070		g = 0.0863 +/- 0.0042	
arg(g)/pi= 0.0000 +/- nan		arg(g)/pi= -0.0917 +/- 0.0715		arg(g)/pi= 0.9242 +/- 0.0256	
-----					
g_re= 0.0000 +/- 0.0000		g_re= 0.0341 +/- 0.0079		g_re= -0.0839 +/- 0.0044	
g_im= 0.0000 +/- 0.0000		g_im= -0.0101 +/- 0.0071		g_im= 0.0204 +/- 0.0068	
corr= [ 0.00]		corr= [ 0.41]		corr= [ 0.27]	

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# k\_2poles\_cxxcxc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 26.78 / (34 - 9) = 1.07$

JP2+_g_kaon:kaon/1^D_2_pole0	-1.1406 +/- 0.28082	1.00	-0.60	-0.30	0.41	0.13	0.84	0.42	0.45	0.10
JP2+_g_kaon:kaon/1^D_2_pole1	1.5668 +/- 0.33899	1.00	0.38	-0.68	-0.01	-0.79	-0.31	-0.14	0.35	
JP2+_g_pi:pi/1^D_2_pole0	1.7964 +/- 0.08641	1.00	-0.63	0.04	-0.18	-0.44	-0.03	-0.17		
JP2+_g_pi:pi/1^D_2_pole1	0.0032155 +/- 0.21339	1.00	-0.08	0.41	0.44	-0.01	0.06			
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	42.473 +/- 24.501	1.00	0.14	0.17	-0.01	-0.09				
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	-35.991 +/- 119.66	1.00	0.43	0.38	-0.12					
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	27.325 +/- 22.901	1.00	0.29	0.04						
JP2+_m_pole0	0.26420 +/- 0.0010298	1.00	0.20							
JP2+_m_pole1	0.28434 +/- 0.0014938	1.00								
JP2+_g_eta:eta/1^D_2_pole0	0.0000 +/- 0									FIXED
JP2+_g_eta:eta/1^D_2_pole1	0.0000 +/- 0									FIXED
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0									FIXED
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0									FIXED
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0									FIXED

## pole singularities

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JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$\text{sqrt}(s)_{\text{pole}} = (0.2625 \pm 0.0013167) + (i/2)(-0.023307 \pm 0.0022781) [-0.05]$

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= -0.0809 +/- 0.0011	k_re= -0.0887 +/- 0.0010	k_re= 0.1117 +/- 0.0008			
k_im= 0.0095 +/- 0.0009	k_im= 0.0086 +/- 0.0008	k_im= -0.0068 +/- 0.0007			
corr= [-0.03]	corr= [-0.04]	corr= [-0.05]			
g = 0.0000 +/- nan	g = 0.0328 +/- 0.0092	g = 0.0901 +/- 0.0034			
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.1184 +/- 0.0346	arg(g)/pi= 0.9386 +/- 0.0148			
g_re= 0.0000 +/- 0.0000	g_re= 0.0306 +/- 0.0097	g_re= -0.0885 +/- 0.0035			
g_im= 0.0000 +/- 0.0000	g_im= -0.0119 +/- 0.0020	g_im= 0.0173 +/- 0.0041			
corr= [0.00]	corr= [-0.24]	corr= [0.14]			

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JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

sqrt(s)\_pole = ( 0.2826 +/- 0.0016799)  
+ (i/2)\*(-0.011615 +/- 0.0034803) [ 0.33]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0961 +/- 0.0012	k_re= 0.1028 +/- 0.0011	k_re= -0.1233 +/- 0.0010
k_im= 0.0043 +/- 0.0013	k_im= -0.0040 +/- 0.0012	k_im= 0.0033 +/- 0.0010
corr= [ 0.33]	corr= [ 0.33]	corr= [ 0.33]
g = 0.0000 +/- nan	g = 0.0689 +/- 0.0092	g = 0.0168 +/- 0.0052
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.0891 +/- 0.0624	arg(g)/pi= 0.6619 +/- 0.1725
g_re= 0.0000 +/- 0.0000	g_re= 0.0662 +/- 0.0065	g_re= -0.0082 +/- 0.0089
g_im= 0.0000 +/- 0.0000	g_im= -0.0190 +/- 0.0149	g_im= 0.0147 +/- 0.0056
corr= [ 0.00]	corr= [-0.53]	corr= [ 0.36]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = ( 0.2604 +/- 0.0018128)  
+ (i/2)\*(-0.027911 +/- 0.0024398) [ 0.49]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0793 +/- 0.0014	k_re= 0.0872 +/- 0.0013	k_re= 0.1105 +/- 0.0011
k_im= 0.0115 +/- 0.0011	k_im= -0.0104 +/- 0.0009	k_im= -0.0082 +/- 0.0007
corr= [ 0.54]	corr= [ 0.53]	corr= [ 0.51]
g = 0.0000 +/- nan	g = 0.0364 +/- 0.0084	g = 0.0854 +/- 0.0037
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.1197 +/- 0.0222	arg(g)/pi= 0.9148 +/- 0.0201
g_re= 0.0000 +/- 0.0000	g_re= 0.0338 +/- 0.0072	g_re= -0.0824 +/- 0.0040
g_im= 0.0000 +/- 0.0000	g_im= -0.0134 +/- 0.0050	g_im= 0.0226 +/- 0.0052
corr= [ 0.00]	corr= [-0.91]	corr= [ 0.29]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = ( 0.283 +/- 0.0018286)  
+ (i/2)\*(-0.0099319 +/- 0.0025652) [ 0.09]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0964 +/- 0.0013	k_re= 0.1031 +/- 0.0013	k_re= 0.1235 +/- 0.0010
k_im= 0.0036 +/- 0.0009	k_im= -0.0034 +/- 0.0009	k_im= -0.0028 +/- 0.0007
corr= [ 0.10]	corr= [ 0.10]	corr= [ 0.09]
g = 0.0000 +/- nan	g = 0.0585 +/- 0.0067	g = 0.0176 +/- 0.0050
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.0850 +/- 0.0693	arg(g)/pi= 0.1953 +/- 0.1377
g_re= 0.0000 +/- 0.0000	g_re= 0.0564 +/- 0.0059	g_re= 0.0144 +/- 0.0056
g_im= 0.0000 +/- 0.0000	g_im= -0.0154 +/- 0.0131	g_im= 0.0102 +/- 0.0072
corr= [ 0.00]	corr= [-0.02]	corr= [-0.34]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

sqrt(s)\_pole = ( 0.2625 +/- 0.0013167)  
+ (i/2)\*(-0.023307 +/- 0.0022781) [-0.05]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0809 +/- 0.0011	k_re= -0.0887 +/- 0.0010	k_re= 0.1117 +/- 0.0008
k_im= -0.0095 +/- 0.0009	k_im= 0.0086 +/- 0.0008	k_im= -0.0068 +/- 0.0007
corr= [-0.03]	corr= [-0.04]	corr= [-0.05]
g = 0.0000 +/- nan	g = 0.0328 +/- 0.0092	g = 0.0901 +/- 0.0034
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.1184 +/- 0.0346	arg(g)/pi= 0.9386 +/- 0.0148
g_re= 0.0000 +/- 0.0000	g_re= 0.0306 +/- 0.0097	g_re= -0.0885 +/- 0.0035
g_im= 0.0000 +/- 0.0000	g_im= -0.0119 +/- 0.0020	g_im= 0.0173 +/- 0.0041
corr= [ 0.00]	corr= [-0.24]	corr= [ 0.14]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

sqrt(s)\_pole = ( 0.2826 +/- 0.0016799)  
+ (i/2)\*(-0.011615 +/- 0.0034803) [ 0.33]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0961 +/- 0.0012	k_re= 0.1028 +/- 0.0011	k_re= -0.1233 +/- 0.0010
k_im= -0.0043 +/- 0.0013	k_im= -0.0040 +/- 0.0012	k_im= 0.0033 +/- 0.0010
corr= [ 0.33]	corr= [ 0.33]	corr= [ 0.33]
g = 0.0000 +/- nan	g = 0.0689 +/- 0.0092	g = 0.0168 +/- 0.0052
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.0891 +/- 0.0624	arg(g)/pi= 0.6619 +/- 0.1725
g_re= 0.0000 +/- 0.0000	g_re= 0.0662 +/- 0.0065	g_re= -0.0082 +/- 0.0089
g_im= 0.0000 +/- 0.0000	g_im= -0.0190 +/- 0.0149	g_im= 0.0147 +/- 0.0056

corr= [ 0.00] | corr= [-0.53] | corr= [ 0.36] |

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\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = ( 0.2604 +/- 0.0018128)  
+ (i/2)\*(-0.027911 +/- 0.0024398) [ 0.49]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0793 +/- 0.0014	k_re= 0.0872 +/- 0.0013	k_re= 0.1105 +/- 0.0011
k_im= -0.0115 +/- 0.0011	k_im= -0.0104 +/- 0.0009	k_im= -0.0082 +/- 0.0007
corr= [ 0.54]	corr= [ 0.53]	corr= [ 0.51]
g = 0.0000 +/- nan	g = 0.0364 +/- 0.0084	g = 0.0854 +/- 0.0037
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.1197 +/- 0.0222	arg(g)/pi= 0.9148 +/- 0.0201
g_re= 0.0000 +/- 0.0000	g_re= 0.0338 +/- 0.0072	g_re= -0.0824 +/- 0.0040
g_im= 0.0000 +/- 0.0000	g_im= -0.0134 +/- 0.0050	g_im= 0.0226 +/- 0.0052
corr= [ 0.00]	corr= [-0.91]	corr= [ 0.29]

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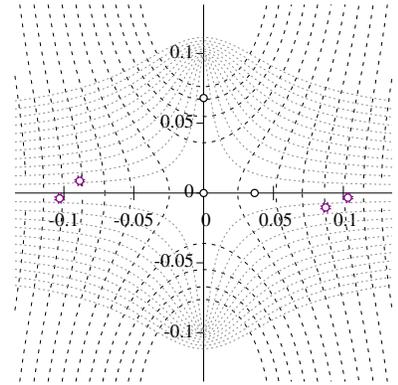
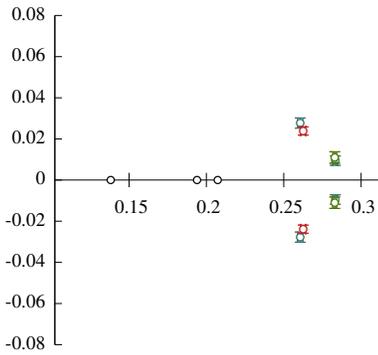
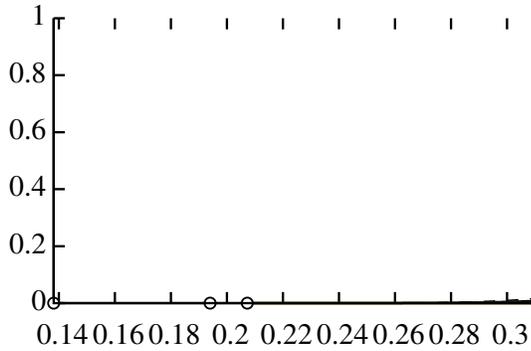
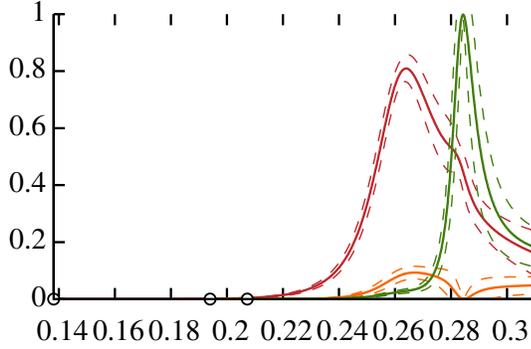
\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = ( 0.283 +/- 0.0018286)  
+ (i/2)\*(-0.0099319 +/- 0.0025652) [ 0.09]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0964 +/- 0.0013	k_re= 0.1031 +/- 0.0013	k_re= 0.1235 +/- 0.0010
k_im= -0.0036 +/- 0.0009	k_im= -0.0034 +/- 0.0009	k_im= -0.0028 +/- 0.0007
corr= [ 0.10]	corr= [ 0.10]	corr= [ 0.09]
g = 0.0000 +/- nan	g = 0.0585 +/- 0.0067	g = 0.0176 +/- 0.0050
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.0850 +/- 0.0693	arg(g)/pi= 0.1953 +/- 0.1377
g_re= 0.0000 +/- 0.0000	g_re= 0.0564 +/- 0.0059	g_re= 0.0144 +/- 0.0056
g_im= 0.0000 +/- 0.0000	g_im= -0.0154 +/- 0.0131	g_im= 0.0102 +/- 0.0072
corr= [ 0.00]	corr= [-0.02]	corr= [-0.34]

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# k\_2poles\_cxxxxc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 26.92 / (34 - 8) = 1.04$

JP2+_g_kaon:kaon/1^D_2_pole0	-1.0404 +/- 0.16622	1.00	0.22	-0.28	0.16	0.01	0.16	0.32	0.42
JP2+_g_kaon:kaon/1^D_2_pole1	1.4471 +/- 0.19708	1.00	0.37	-0.60	0.14	0.11	0.34	0.37	
JP2+_g_pi:pi/1^D_2_pole0	1.7445 +/- 0.084187		1.00	-0.66	0.05	-0.41	0.07	-0.26	
JP2+_g_pi:pi/1^D_2_pole1	0.052175 +/- 0.18974			1.00	-0.12	0.33	-0.22	0.19	
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	43.209 +/- 24.563				1.00	0.10	-0.12	-0.11	
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	32.053 +/- 19.929					1.00	0.22	0.17	
JP2+_m_pole0	0.26432 +/- 0.0013724						1.00	0.34	
JP2+_m_pole1	0.28376 +/- 0.0014513							1.00	
JP2+_g_eta:eta/1^D_2_pole0	0.0000 +/- 0								FIXED
JP2+_g_eta:eta/1^D_2_pole1	0.0000 +/- 0								FIXED
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0								FIXED
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0								FIXED
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	0.0000 +/- 0								FIXED
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0								FIXED

## pole singularities

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JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$\text{sqrt}(s)_{\text{pole}} = (0.26255 \pm 0.0016675) + (i/2)(-0.023858 \pm 0.0019785) [-0.11]$

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= -0.0809 +/- 0.0013	k_re= -0.0887 +/- 0.0012	k_re= 0.1117 +/- 0.0010			
k_im= 0.0097 +/- 0.0008	k_im= 0.0088 +/- 0.0007	k_im= -0.0070 +/- 0.0006			
corr= [-0.03]	corr= [-0.05]	corr= [-0.09]			
g = 0.0000 +/- nan	g = 0.0306 +/- 0.0053	g = 0.0906 +/- 0.0037			
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.1314 +/- 0.0196	arg(g)/pi= 0.9376 +/- 0.0157			
g_re= 0.0000 +/- 0.0000	g_re= 0.0281 +/- 0.0053	g_re= -0.0888 +/- 0.0038			
g_im= 0.0000 +/- 0.0000	g_im= -0.0123 +/- 0.0020	g_im= 0.0176 +/- 0.0044			
corr= [ 0.00]	corr= [-0.55]	corr= [ 0.13]			

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JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28296 \pm 0.0012535) + (i/2)*(-0.010991 \pm 0.0028063) [-0.48]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re= -0.0964 +/- 0.0009	k_im= 0.0040 +/- 0.0010	corr= [-0.49]	k_re= 0.1030 +/- 0.0009	k_im= -0.0038 +/- 0.0010	corr= [-0.48]	k_re= -0.1235 +/- 0.0007	k_im= 0.0031 +/- 0.0008	corr= [-0.48]
g = 0.0000 +/- nan	g = 0.0673 +/- 0.0080	g = 0.0160 +/- 0.0029	arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.0723 +/- 0.0114	arg(g)/pi= 0.6602 +/- 0.2021			
g_re= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	corr= [ 0.00]	g_re= 0.0656 +/- 0.0075	g_im= -0.0152 +/- 0.0036	corr= [-0.79]	g_re= -0.0077 +/- 0.0095	g_im= 0.0140 +/- 0.0045	corr= [ 0.78]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.26062 \pm 0.0017768) + (i/2)*(-0.027722 \pm 0.0024885) [ 0.16]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re= -0.0795 +/- 0.0014	k_im= 0.0114 +/- 0.0010	corr= [ 0.22]	k_re= 0.0874 +/- 0.0013	k_im= -0.0103 +/- 0.0009	corr= [ 0.20]	k_re= 0.1106 +/- 0.0010	k_im= -0.0082 +/- 0.0007	corr= [ 0.17]
g = 0.0000 +/- nan	g = 0.0342 +/- 0.0054	g = 0.0859 +/- 0.0035	arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.1201 +/- 0.0136	arg(g)/pi= 0.9165 +/- 0.0185			
g_re= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	corr= [ 0.00]	g_re= 0.0318 +/- 0.0049	g_im= -0.0126 +/- 0.0026	corr= [-0.80]	g_re= -0.0830 +/- 0.0035	g_im= 0.0223 +/- 0.0050	corr= [ 0.04]

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JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.28331 \pm 0.0015185) + (i/2)*(-0.0094783 \pm 0.0022939) [-0.44]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re= -0.0966 +/- 0.0011	k_im= 0.0035 +/- 0.0008	corr= [-0.43]	k_re= 0.1033 +/- 0.0010	k_im= -0.0033 +/- 0.0008	corr= [-0.43]	k_re= 0.1237 +/- 0.0009	k_im= -0.0027 +/- 0.0007	corr= [-0.43]
g = 0.0000 +/- nan	g = 0.0576 +/- 0.0071	g = 0.0168 +/- 0.0028	arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.0668 +/- 0.0249	arg(g)/pi= 0.1959 +/- 0.1642			
g_re= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	corr= [ 0.00]	g_re= 0.0564 +/- 0.0066	g_im= -0.0120 +/- 0.0052	corr= [-0.56]	g_re= 0.0137 +/- 0.0048	g_im= 0.0097 +/- 0.0077	corr= [-0.78]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.26255 \pm 0.0016675) + (i/2)*(-0.023858 \pm 0.0019785) [-0.11]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re= 0.0809 +/- 0.0013	k_im= -0.0097 +/- 0.0008	corr= [-0.03]	k_re= -0.0887 +/- 0.0012	k_im= 0.0088 +/- 0.0007	corr= [-0.05]	k_re= 0.1117 +/- 0.0010	k_im= -0.0070 +/- 0.0006	corr= [-0.09]
g = 0.0000 +/- nan	g = 0.0306 +/- 0.0053	g = 0.0906 +/- 0.0037	arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.1314 +/- 0.0196	arg(g)/pi= 0.9376 +/- 0.0157			
g_re= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	corr= [ 0.00]	g_re= 0.0281 +/- 0.0053	g_im= -0.0123 +/- 0.0020	corr= [-0.55]	g_re= -0.0888 +/- 0.0038	g_im= 0.0176 +/- 0.0044	corr= [ 0.13]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28296 \pm 0.0012535) + (i/2)*(-0.010991 \pm 0.0028063) [-0.48]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re= 0.0964 +/- 0.0009	k_im= -0.0040 +/- 0.0010	corr= [-0.49]	k_re= 0.1030 +/- 0.0009	k_im= -0.0038 +/- 0.0010	corr= [-0.48]	k_re= -0.1235 +/- 0.0007	k_im= 0.0031 +/- 0.0008	corr= [-0.48]
g = 0.0000 +/- nan	g = 0.0673 +/- 0.0080	g = 0.0160 +/- 0.0029	arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.0723 +/- 0.0114	arg(g)/pi= 0.6602 +/- 0.2021			
g_re= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	corr= [ 0.00]	g_re= 0.0656 +/- 0.0075	g_im= -0.0152 +/- 0.0036	corr= [-0.79]	g_re= -0.0077 +/- 0.0095	g_im= 0.0140 +/- 0.0045	corr= [ 0.78]

corr= [ 0.00] | corr= [-0.79] | corr= [ 0.78] |

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\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.26062 +/- 0.0017768)  
+ (i/2)\*(-0.027722 +/- 0.0024885) [ 0.16]

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= 0.0795 +/- 0.0014		k_re= 0.0874 +/- 0.0013		k_re= 0.1106 +/- 0.0010	
k_im= -0.0114 +/- 0.0010		k_im= -0.0103 +/- 0.0009		k_im= -0.0082 +/- 0.0007	
corr= [ 0.22]		corr= [ 0.20]		corr= [ 0.17]	
-----					
g = 0.0000 +/- nan		g = 0.0342 +/- 0.0054		g = 0.0859 +/- 0.0035	
arg(g)/pi= 0.0000 +/- nan		arg(g)/pi= -0.1201 +/- 0.0136		arg(g)/pi= 0.9165 +/- 0.0185	
-----					
g_re= 0.0000 +/- 0.0000		g_re= 0.0318 +/- 0.0049		g_re= -0.0830 +/- 0.0035	
g_im= 0.0000 +/- 0.0000		g_im= -0.0126 +/- 0.0026		g_im= 0.0223 +/- 0.0050	
corr= [ 0.00]		corr= [-0.80]		corr= [ 0.04]	

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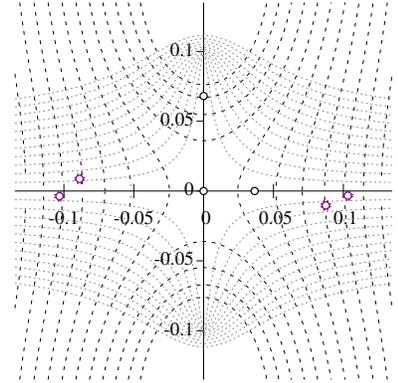
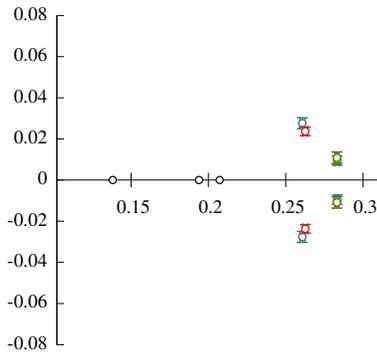
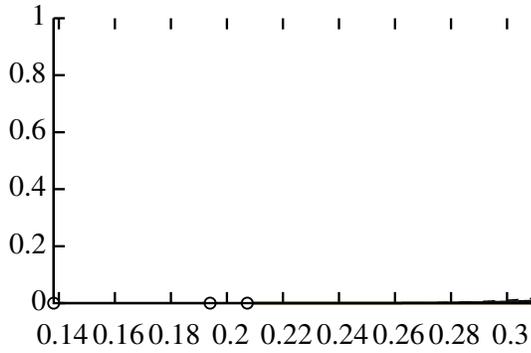
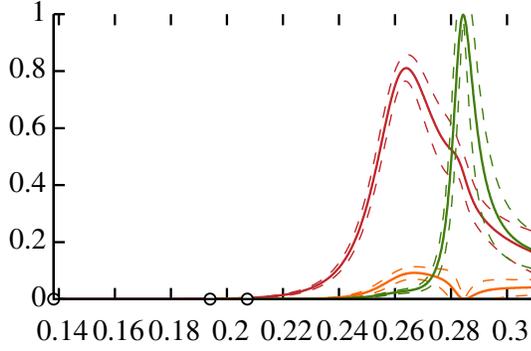
\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.28331 +/- 0.0015185)  
+ (i/2)\*(-0.0094783 +/- 0.0022939) [-0.44]

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= 0.0966 +/- 0.0011		k_re= 0.1033 +/- 0.0010		k_re= 0.1237 +/- 0.0009	
k_im= -0.0035 +/- 0.0008		k_im= -0.0033 +/- 0.0008		k_im= -0.0027 +/- 0.0007	
corr= [-0.43]		corr= [-0.43]		corr= [-0.43]	
-----					
g = 0.0000 +/- nan		g = 0.0576 +/- 0.0071		g = 0.0168 +/- 0.0028	
arg(g)/pi= 0.0000 +/- nan		arg(g)/pi= -0.0668 +/- 0.0249		arg(g)/pi= 0.1959 +/- 0.1642	
-----					
g_re= 0.0000 +/- 0.0000		g_re= 0.0564 +/- 0.0066		g_re= 0.0137 +/- 0.0048	
g_im= 0.0000 +/- 0.0000		g_im= -0.0120 +/- 0.0052		g_im= 0.0097 +/- 0.0077	
corr= [ 0.00]		corr= [-0.56]		corr= [-0.78]	

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# k\_2poles\_cxxxxc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 26.86 / (34 - 8) = 1.03$

JP2+_g_kaon:kaon/1^D_2_pole0	-1.0631 +/- 0.16708	1.00	0.16	-0.29	0.18	0.03	0.14	0.18	0.39
JP2+_g_kaon:kaon/1^D_2_pole1	1.4841 +/- 0.21222	1.00	0.42	-0.64	0.12	0.09	0.36	0.42	
JP2+_g_pi:pi/1^D_2_pole0	1.7898 +/- 0.091489		1.00	-0.67	0.03	-0.39	0.21	-0.19	
JP2+_g_pi:pi/1^D_2_pole1	0.034618 +/- 0.20811			1.00	-0.10	0.30	-0.32	0.12	
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	43.591 +/- 24.499				1.00	0.10	-0.15	-0.09	
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	30.582 +/- 21.251					1.00	0.19	0.16	
JP2+_m_pole0	0.26432 +/- 0.0015386						1.00	0.30	
JP2+_m_pole1	0.28430 +/- 0.001538							1.00	
JP2+_g_eta:eta/1^D_2_pole0	0.0000 +/- 0								FIXED
JP2+_g_eta:eta/1^D_2_pole1	0.0000 +/- 0								FIXED
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0								FIXED
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0								FIXED
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	0.0000 +/- 0								FIXED
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0								FIXED

## pole singularities

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JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$\text{sqrt}(s)_{\text{pole}} = (0.26261 \pm 0.0017421) + (i/2)*(-0.023684 \pm 0.0020747) [-0.21]$

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= -0.0810 +/- 0.0014	k_im= 0.0096 +/- 0.0008	k_re= -0.0888 +/- 0.0013	k_im= 0.0088 +/- 0.0008	k_re= 0.1117 +/- 0.0010	k_im= -0.0070 +/- 0.0006
corr= [-0.13]		corr= [-0.15]		corr= [-0.19]	
g = 0.0000 +/- nan	arg(g)/pi= 0.0000 +/- nan	g = 0.0304 +/- 0.0052	arg(g)/pi= -0.1277 +/- 0.0204	g = 0.0902 +/- 0.0039	arg(g)/pi= 0.9392 +/- 0.0153
g_re= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_re= 0.0280 +/- 0.0052	g_im= -0.0119 +/- 0.0020	g_re= -0.0886 +/- 0.0039	g_im= 0.0171 +/- 0.0043
corr= [ 0.00]		corr= [-0.50]		corr= [ 0.05]	

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 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = ( 0.283 \text{ +/- } 0.0012612) + (i/2)*(-0.010864 \text{ +/- } 0.0027907) [-0.49]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re=	-0.0964 +/- 0.0009		k_re=	0.1031 +/- 0.0009		k_re=	-0.1235 +/- 0.0007	
k_im=	0.0040 +/- 0.0010		k_im=	-0.0037 +/- 0.0010		k_im=	0.0031 +/- 0.0008	
corr=	[-0.50]		corr=	[-0.50]		corr=	[-0.49]	
g =	0.0000 +/- nan		g =	0.0669 +/- 0.0080		g =	0.0154 +/- 0.0027	
arg(g)/pi=	0.0000 +/- nan		arg(g)/pi=	-0.0700 +/- 0.0107		arg(g)/pi=	0.6491 +/- 0.2118	
g_re=	0.0000 +/- 0.0000		g_re=	0.0653 +/- 0.0075		g_re=	-0.0069 +/- 0.0095	
g_im=	0.0000 +/- 0.0000		g_im=	-0.0146 +/- 0.0034		g_im=	0.0137 +/- 0.0046	
corr=	[ 0.00]		corr=	[-0.78]		corr=	[ 0.80]	

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 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.26076 \text{ +/- } 0.0017598) + (i/2)*(-0.027622 \text{ +/- } 0.0027022) [ 0.00]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re=	-0.0796 +/- 0.0014		k_re=	0.0875 +/- 0.0013		k_re=	0.1107 +/- 0.0010	
k_im=	0.0113 +/- 0.0011		k_im=	-0.0103 +/- 0.0010		k_im=	-0.0081 +/- 0.0008	
corr=	[ 0.05]		corr=	[ 0.03]		corr=	[ 0.01]	
g =	0.0000 +/- nan		g =	0.0342 +/- 0.0056		g =	0.0859 +/- 0.0038	
arg(g)/pi=	0.0000 +/- nan		arg(g)/pi=	-0.1144 +/- 0.0138		arg(g)/pi=	0.9186 +/- 0.0179	
g_re=	0.0000 +/- 0.0000		g_re=	0.0320 +/- 0.0052		g_re=	-0.0832 +/- 0.0036	
g_im=	0.0000 +/- 0.0000		g_im=	-0.0120 +/- 0.0025		g_im=	0.0217 +/- 0.0050	
corr=	[ 0.00]		corr=	[-0.78]		corr=	[-0.13]	

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.28338 \text{ +/- } 0.0015006) + (i/2)*(-0.0094925 \text{ +/- } 0.0022691) [-0.44]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re=	-0.0967 +/- 0.0011		k_re=	0.1033 +/- 0.0010		k_re=	0.1237 +/- 0.0009	
k_im=	0.0035 +/- 0.0008		k_im=	-0.0033 +/- 0.0008		k_im=	-0.0027 +/- 0.0006	
corr=	[-0.43]		corr=	[-0.43]		corr=	[-0.43]	
g =	0.0000 +/- nan		g =	0.0579 +/- 0.0071		g =	0.0163 +/- 0.0027	
arg(g)/pi=	0.0000 +/- nan		arg(g)/pi=	-0.0641 +/- 0.0243		arg(g)/pi=	0.1883 +/- 0.1727	
g_re=	0.0000 +/- 0.0000		g_re=	0.0567 +/- 0.0066		g_re=	0.0135 +/- 0.0049	
g_im=	0.0000 +/- 0.0000		g_im=	-0.0116 +/- 0.0052		g_im=	0.0091 +/- 0.0078	
corr=	[ 0.00]		corr=	[-0.58]		corr=	[-0.80]	

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 JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.26261 \text{ +/- } 0.0017421) + (i/2)*(-0.023684 \text{ +/- } 0.0020747) [-0.21]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re=	0.0810 +/- 0.0014		k_re=	-0.0888 +/- 0.0013		k_re=	0.1117 +/- 0.0010	
k_im=	-0.0096 +/- 0.0008		k_im=	0.0088 +/- 0.0008		k_im=	-0.0070 +/- 0.0006	
corr=	[-0.13]		corr=	[-0.15]		corr=	[-0.19]	
g =	0.0000 +/- nan		g =	0.0304 +/- 0.0052		g =	0.0902 +/- 0.0039	
arg(g)/pi=	0.0000 +/- nan		arg(g)/pi=	-0.1277 +/- 0.0204		arg(g)/pi=	0.9392 +/- 0.0153	
g_re=	0.0000 +/- 0.0000		g_re=	0.0280 +/- 0.0052		g_re=	-0.0886 +/- 0.0039	
g_im=	0.0000 +/- 0.0000		g_im=	-0.0119 +/- 0.0020		g_im=	0.0171 +/- 0.0043	
corr=	[ 0.00]		corr=	[-0.50]		corr=	[ 0.05]	

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 JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = ( 0.283 \text{ +/- } 0.0012612) + (i/2)*(-0.010864 \text{ +/- } 0.0027907) [-0.49]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re=	0.0964 +/- 0.0009		k_re=	0.1031 +/- 0.0009		k_re=	-0.1235 +/- 0.0007	
k_im=	-0.0040 +/- 0.0010		k_im=	-0.0037 +/- 0.0010		k_im=	0.0031 +/- 0.0008	
corr=	[-0.50]		corr=	[-0.50]		corr=	[-0.49]	
g =	0.0000 +/- nan		g =	0.0669 +/- 0.0080		g =	0.0154 +/- 0.0027	
arg(g)/pi=	0.0000 +/- nan		arg(g)/pi=	-0.0700 +/- 0.0107		arg(g)/pi=	0.6491 +/- 0.2118	
g_re=	0.0000 +/- 0.0000		g_re=	0.0653 +/- 0.0075		g_re=	-0.0069 +/- 0.0095	
g_im=	0.0000 +/- 0.0000		g_im=	-0.0146 +/- 0.0034		g_im=	0.0137 +/- 0.0046	

corr= [ 0.00] | corr= [-0.78] | corr= [ 0.80] |

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JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.26076 +/- 0.0017598)  
+ (i/2)\*(-0.027622 +/- 0.0027022) [ 0.00]

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= 0.0796 +/- 0.0014		k_re= 0.0875 +/- 0.0013		k_re= 0.1107 +/- 0.0010	
k_im= -0.0113 +/- 0.0011		k_im= -0.0103 +/- 0.0010		k_im= -0.0081 +/- 0.0008	
corr= [ 0.05]		corr= [ 0.03]		corr= [ 0.01]	
-----					
g = 0.0000 +/- nan		g = 0.0342 +/- 0.0056		g = 0.0859 +/- 0.0038	
arg(g)/pi= 0.0000 +/- nan		arg(g)/pi= -0.1144 +/- 0.0138		arg(g)/pi= 0.9186 +/- 0.0179	
-----					
g_re= 0.0000 +/- 0.0000		g_re= 0.0320 +/- 0.0052		g_re= -0.0832 +/- 0.0036	
g_im= 0.0000 +/- 0.0000		g_im= -0.0120 +/- 0.0025		g_im= 0.0217 +/- 0.0050	
corr= [ 0.00]		corr= [-0.78]		corr= [-0.13]	

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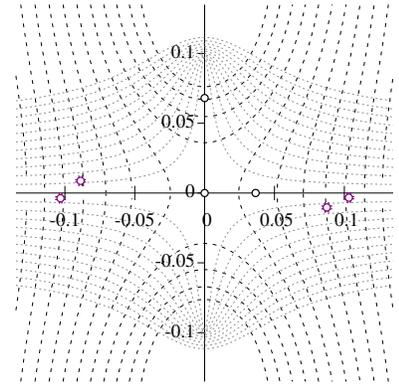
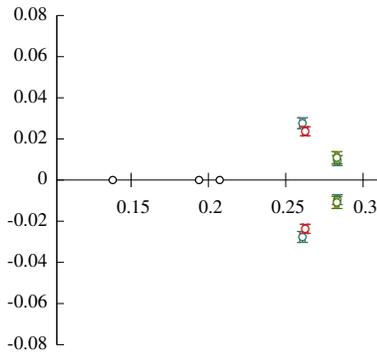
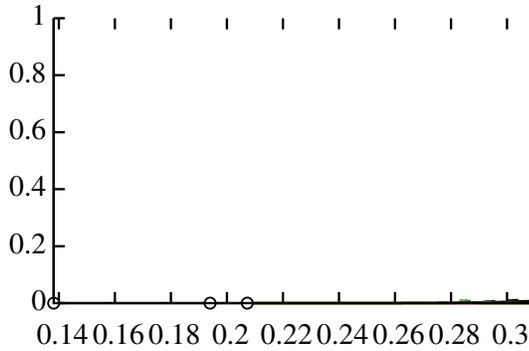
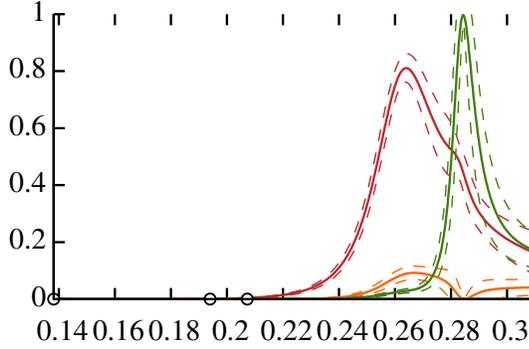
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JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.28338 +/- 0.0015006)  
+ (i/2)\*(-0.0094925 +/- 0.0022691) [-0.44]

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= 0.0967 +/- 0.0011		k_re= 0.1033 +/- 0.0010		k_re= 0.1237 +/- 0.0009	
k_im= -0.0035 +/- 0.0008		k_im= -0.0033 +/- 0.0008		k_im= -0.0027 +/- 0.0006	
corr= [-0.43]		corr= [-0.43]		corr= [-0.43]	
-----					
g = 0.0000 +/- nan		g = 0.0579 +/- 0.0071		g = 0.0163 +/- 0.0027	
arg(g)/pi= 0.0000 +/- nan		arg(g)/pi= -0.0641 +/- 0.0243		arg(g)/pi= 0.1883 +/- 0.1727	
-----					
g_re= 0.0000 +/- 0.0000		g_re= 0.0567 +/- 0.0066		g_re= 0.0135 +/- 0.0049	
g_im= 0.0000 +/- 0.0000		g_im= -0.0116 +/- 0.0052		g_im= 0.0091 +/- 0.0078	
corr= [ 0.00]		corr= [-0.58]		corr= [-0.80]	

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# k\_2poles\_free\_geta\_cxxxxc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 26.86 / (34 - 10) = 1.12$

JP2+_g_eta:eta/1^D_2_pole0	-8.0439e-05 +/- 0.32518	1.00	-0.81	-0.01	-0.00	0.00	-0.00	-0.00	0.00	-0.01
JP2+_g_eta:eta/1^D_2_pole1	-0.00016964 +/- 0.56527	1.00	0.01	0.00	-0.00	0.00	0.02	0.00	0.00	0.01
JP2+_g_kaon:kaon/1^D_2_pole0	-1.0630 +/- 0.16748	1.00	0.17	-0.28	0.18	0.03	0.14	0.20	0.39	
JP2+_g_kaon:kaon/1^D_2_pole1	1.4844 +/- 0.21205	1.00	0.41	-0.64	0.12	0.09	0.36	0.42		
JP2+_g_pi:pi/1^D_2_pole0	1.7897 +/- 0.091238	1.00	-0.67	0.03	-0.40	0.20	-0.19			
JP2+_g_pi:pi/1^D_2_pole1	0.034348 +/- 0.20759	1.00	-0.10	0.30	-0.31	0.12				
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	43.537 +/- 24.49	1.00	0.10	-0.14	-0.09					
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	30.643 +/- 21.262	1.00	0.19	0.16						
JP2+_m_pole0	0.26432 +/- 0.0015167	1.00	0.30							
JP2+_m_pole1	0.28430 +/- 0.0015391	1.00								
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0									FIXED
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0									FIXED
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	0.0000 +/- 0									FIXED
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0									FIXED

## pole singularities

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JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$\text{sqrt}(s)_{\text{pole}} = (0.26261 \pm 0.0016399) + (i/2) * (-0.023688 \pm 0.0021897) [-0.17]$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0810 +/- 0.0013	k_re= -0.0888 +/- 0.0012	k_re= 0.1117 +/- 0.0010
k_im= 0.0096 +/- 0.0009	k_im= 0.0088 +/- 0.0008	k_im= -0.0070 +/- 0.0006
corr= [-0.11]	corr= [-0.13]	corr= [-0.16]
g = 0.0004 +/- 0.0049	g = 0.0304 +/- 0.0054	g = 0.0902 +/- 0.0039
arg(g)/pi= -0.1431 +/- 0.3748	arg(g)/pi= -0.1277 +/- 0.0198	arg(g)/pi= -0.0608 +/- 0.0148
g_re= 0.0003 +/- 0.0044	g_re= 0.0280 +/- 0.0054	g_re= 0.0886 +/- 0.0039
g_im= -0.0002 +/- 0.0022	g_im= -0.0119 +/- 0.0020	g_im= -0.0171 +/- 0.0042
corr= [-0.98]	corr= [-0.55]	corr= [-0.03]

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 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = ( 0.283 \text{ +/- } 0.0012761) + (i/2)*(-0.010864 \text{ +/- } 0.0029397) [-0.45]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0964 +/- 0.0009	k_re= 0.1031 +/- 0.0009	k_re= -0.1235 +/- 0.0007
k_im= 0.0040 +/- 0.0011	k_im= -0.0037 +/- 0.0010	k_im= 0.0031 +/- 0.0008
corr= [-0.46]	corr= [-0.46]	corr= [-0.46]
g = 0.0010 +/- 0.0133	g = 0.0669 +/- 0.0083	g = 0.0154 +/- 0.0027
arg(g)/pi= -0.0792 +/- 0.2363	arg(g)/pi= -0.0700 +/- 0.0105	arg(g)/pi= -0.3506 +/- 0.2036
g_re= 0.0010 +/- 0.0129	g_re= 0.0653 +/- 0.0079	g_re= 0.0069 +/- 0.0092
g_im= -0.0002 +/- 0.0034	g_im= -0.0146 +/- 0.0034	g_im= -0.0137 +/- 0.0044
corr= [-0.97]	corr= [-0.80]	corr= [ 0.78]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.26077 \text{ +/- } 0.0016805) + (i/2)*(-0.027627 \text{ +/- } 0.0026613) [ 0.03]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0796 +/- 0.0014	k_re= 0.0875 +/- 0.0012	k_re= 0.1107 +/- 0.0010
k_im= 0.0113 +/- 0.0011	k_im= -0.0103 +/- 0.0010	k_im= -0.0081 +/- 0.0008
corr= [ 0.07]	corr= [ 0.06]	corr= [ 0.04]
g = 0.0004 +/- 0.0055	g = 0.0342 +/- 0.0057	g = 0.0860 +/- 0.0039
arg(g)/pi= -0.1340 +/- 0.1935	arg(g)/pi= -0.1144 +/- 0.0141	arg(g)/pi= -0.0814 +/- 0.0171
g_re= 0.0004 +/- 0.0050	g_re= 0.0320 +/- 0.0053	g_re= 0.0832 +/- 0.0036
g_im= -0.0002 +/- 0.0022	g_im= -0.0120 +/- 0.0026	g_im= -0.0217 +/- 0.0049
corr= [-0.99]	corr= [-0.78]	corr= [-0.17]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.28338 \text{ +/- } 0.0015265) + (i/2)*(-0.0094915 \text{ +/- } 0.0024232) [-0.41]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0967 +/- 0.0011	k_re= 0.1033 +/- 0.0011	k_re= 0.1237 +/- 0.0009
k_im= 0.0035 +/- 0.0009	k_im= -0.0033 +/- 0.0008	k_im= -0.0027 +/- 0.0007
corr= [-0.40]	corr= [-0.40]	corr= [-0.41]
g = 0.0009 +/- 0.0120	g = 0.0579 +/- 0.0076	g = 0.0163 +/- 0.0027
arg(g)/pi= -0.0719 +/- 0.2251	arg(g)/pi= -0.0642 +/- 0.0243	arg(g)/pi= 0.1886 +/- 0.1665
g_re= 0.0009 +/- 0.0117	g_re= 0.0567 +/- 0.0070	g_re= 0.0135 +/- 0.0047
g_im= -0.0002 +/- 0.0028	g_im= -0.0116 +/- 0.0053	g_im= 0.0091 +/- 0.0076
corr= [-0.97]	corr= [-0.63]	corr= [-0.78]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.26261 \text{ +/- } 0.001639) + (i/2)*(-0.023689 \text{ +/- } 0.0021885) [-0.18]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0810 +/- 0.0013	k_re= -0.0888 +/- 0.0012	k_re= 0.1117 +/- 0.0010
k_im= -0.0096 +/- 0.0009	k_im= 0.0088 +/- 0.0008	k_im= -0.0070 +/- 0.0006
corr= [-0.11]	corr= [-0.13]	corr= [-0.16]
g = 0.0004 +/- 0.0050	g = 0.0304 +/- 0.0054	g = 0.0902 +/- 0.0039
arg(g)/pi= -0.1326 +/- 0.3749	arg(g)/pi= -0.1277 +/- 0.0198	arg(g)/pi= -0.0608 +/- 0.0148
g_re= 0.0003 +/- 0.0045	g_re= 0.0280 +/- 0.0054	g_re= 0.0886 +/- 0.0039
g_im= -0.0002 +/- 0.0021	g_im= -0.0119 +/- 0.0020	g_im= -0.0171 +/- 0.0042
corr= [-0.97]	corr= [-0.55]	corr= [-0.03]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = ( 0.283 \text{ +/- } 0.0012757) + (i/2)*(-0.010871 \text{ +/- } 0.0029244) [-0.46]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0964 +/- 0.0009	k_re= 0.1031 +/- 0.0009	k_re= -0.1235 +/- 0.0007
k_im= -0.0040 +/- 0.0011	k_im= -0.0037 +/- 0.0010	k_im= 0.0031 +/- 0.0008
corr= [-0.46]	corr= [-0.46]	corr= [-0.46]
g = 0.0010 +/- 0.0135	g = 0.0669 +/- 0.0083	g = 0.0154 +/- 0.0027
arg(g)/pi= -0.0536 +/- 0.2368	arg(g)/pi= -0.0700 +/- 0.0105	arg(g)/pi= -0.3506 +/- 0.2035
g_re= 0.0010 +/- 0.0133	g_re= 0.0653 +/- 0.0079	g_re= 0.0070 +/- 0.0092
g_im= -0.0002 +/- 0.0024	g_im= -0.0146 +/- 0.0034	g_im= -0.0137 +/- 0.0044

corr= [-0.95] | corr= [-0.80] | corr= [ 0.78] |

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\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.26077 +/- 0.0016797)  
+ (i/2)\*(-0.027628 +/- 0.0026602) [ 0.03]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0796 +/- 0.0014	k_re= 0.0875 +/- 0.0012	k_re= 0.1107 +/- 0.0010
k_im= -0.0113 +/- 0.0011	k_im= -0.0103 +/- 0.0010	k_im= -0.0081 +/- 0.0008
corr= [ 0.07]	corr= [ 0.06]	corr= [ 0.04]
g = 0.0004 +/- 0.0056	g = 0.0342 +/- 0.0057	g = 0.0860 +/- 0.0039
arg(g)/pi= -0.1250 +/- 0.1934	arg(g)/pi= -0.1144 +/- 0.0141	arg(g)/pi= -0.0814 +/- 0.0171
g_re= 0.0004 +/- 0.0052	g_re= 0.0320 +/- 0.0053	g_re= 0.0832 +/- 0.0036
g_im= -0.0002 +/- 0.0021	g_im= -0.0120 +/- 0.0026	g_im= -0.0217 +/- 0.0049
corr= [-0.99]	corr= [-0.78]	corr= [-0.18]

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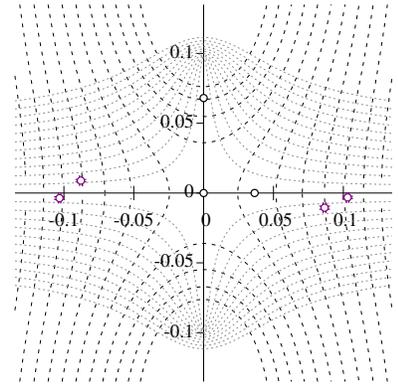
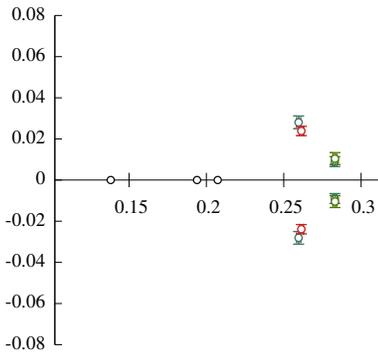
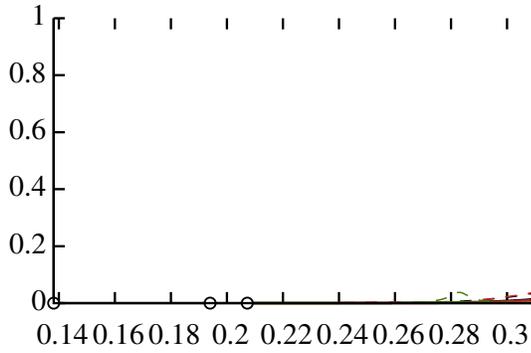
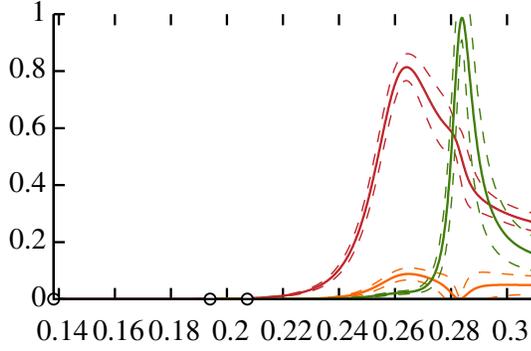
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JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.28338 +/- 0.001525)  
+ (i/2)\*(-0.0094974 +/- 0.0024127) [-0.42]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0966 +/- 0.0011	k_re= 0.1033 +/- 0.0011	k_re= 0.1237 +/- 0.0009
k_im= -0.0035 +/- 0.0009	k_im= -0.0033 +/- 0.0008	k_im= -0.0027 +/- 0.0007
corr= [-0.41]	corr= [-0.41]	corr= [-0.41]
g = 0.0009 +/- 0.0122	g = 0.0579 +/- 0.0076	g = 0.0163 +/- 0.0027
arg(g)/pi= -0.0458 +/- 0.2256	arg(g)/pi= -0.0642 +/- 0.0242	arg(g)/pi= 0.1885 +/- 0.1664
g_re= 0.0009 +/- 0.0121	g_re= 0.0567 +/- 0.0071	g_re= 0.0135 +/- 0.0047
g_im= -0.0001 +/- 0.0019	g_im= -0.0116 +/- 0.0053	g_im= 0.0091 +/- 0.0076
corr= [-0.94]	corr= [-0.63]	corr= [-0.78]

\*\*\*\*\*

# k\_2poles\_free\_geta\_xxcxxc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 28.61 / (34 - 10) = 1.19$

JP2+_g_eta:eta/1^D_2_pole0	0.055052 +/- 0.31601	1.00	-0.61	0.04	0.05	-0.06	0.09	0.30	0.25	-0.01	0.07
JP2+_g_eta:eta/1^D_2_pole1	0.091007 +/- 0.53209	1.00	-0.01	-0.12	0.05	-0.02	-0.20	0.46	0.02	-0.07	
JP2+_g_kaon:kaon/1^D_2_pole0	-1.0862 +/- 0.16277	1.00	0.10	-0.26	0.07	0.08	-0.01	0.05	0.33		
JP2+_g_kaon:kaon/1^D_2_pole1	1.4871 +/- 0.24048	1.00	0.54	-0.78	0.07	-0.08	0.45	0.52			
JP2+_g_pi:pi/1^D_2_pole0	1.8529 +/- 0.08852	1.00	-0.65	0.04	0.02	0.48	0.03				
JP2+_g_pi:pi/1^D_2_pole1	-0.078821 +/- 0.27253	1.00	0.11	0.10	-0.55	-0.14					
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	54.164 +/- 40.678	1.00	0.11	0.10	-0.11	0.02					
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	43.491 +/- 53.82	1.00	0.00	0.00	-0.03						
JP2+_m_pole0	0.26411 +/- 0.0017274	1.00	0.00	0.00	0.33						
JP2+_m_pole1	0.28408 +/- 0.0014787	1.00	0.00	0.00	1.00						
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0	FIXED									
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	0.0000 +/- 0	FIXED									
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0	FIXED									
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0	FIXED									

## pole singularities

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\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$\text{sqrt}(s)_{\text{pole}} = (0.26137 \pm 0.0013695) + (i/2)(-0.023844 \pm 0.0022702) [-0.31]$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0800 +/- 0.0011	k_re= -0.0878 +/- 0.0010	k_re= 0.1110 +/- 0.0008
k_im= 0.0097 +/- 0.0009	k_im= 0.0089 +/- 0.0008	k_im= -0.0070 +/- 0.0007
corr= [-0.28]	corr= [-0.29]	corr= [-0.31]
g = 0.0048 +/- 0.0074	g = 0.0309 +/- 0.0053	g = 0.0888 +/- 0.0039
arg(g)/pi= 0.1971 +/- 0.4256	arg(g)/pi= -0.1147 +/- 0.0194	arg(g)/pi= -0.0804 +/- 0.0068
g_re= 0.0039 +/- 0.0087	g_re= 0.0289 +/- 0.0053	g_re= 0.0860 +/- 0.0034
g_im= 0.0028 +/- 0.0045	g_im= -0.0109 +/- 0.0019	g_im= -0.0222 +/- 0.0027
corr= [-0.07]	corr= [-0.47]	corr= [-0.89]

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\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28308 \pm 0.001253) + (i/2)*(-0.01043 \pm 0.0029434) [-0.58]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0964 +/- 0.0009	k_re= 0.1031 +/- 0.0009	k_re= -0.1236 +/- 0.0007
k_im= 0.0038 +/- 0.0011	k_im= -0.0036 +/- 0.0010	k_im= 0.0030 +/- 0.0008
corr= [-0.58]	corr= [-0.58]	corr= [-0.58]
g = 0.0042 +/- 0.0191	g = 0.0656 +/- 0.0089	g = 0.0152 +/- 0.0050
arg(g)/pi= 0.0257 +/- 0.4375	arg(g)/pi= -0.0630 +/- 0.0121	arg(g)/pi= -0.2262 +/- 0.2289
g_re= 0.0041 +/- 0.0195	g_re= 0.0643 +/- 0.0086	g_re= 0.0116 +/- 0.0105
g_im= 0.0003 +/- 0.0043	g_im= -0.0129 +/- 0.0034	g_im= -0.0099 +/- 0.0059
corr= [-0.91]	corr= [-0.68]	corr= [ 0.86]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.25959 \pm 0.0013672) + (i/2)*(-0.028063 \pm 0.0030961) [-0.17]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0787 +/- 0.0011	k_re= 0.0866 +/- 0.0010	k_re= 0.1100 +/- 0.0008
k_im= 0.0116 +/- 0.0012	k_im= -0.0105 +/- 0.0011	k_im= -0.0083 +/- 0.0009
corr= [-0.19]	corr= [-0.19]	corr= [-0.18]
g = 0.0042 +/- 0.0072	g = 0.0344 +/- 0.0060	g = 0.0852 +/- 0.0042
arg(g)/pi= 0.1606 +/- 0.4911	arg(g)/pi= -0.1096 +/- 0.0148	arg(g)/pi= -0.1016 +/- 0.0113
g_re= 0.0037 +/- 0.0088	g_re= 0.0324 +/- 0.0056	g_re= 0.0809 +/- 0.0032
g_im= 0.0020 +/- 0.0040	g_im= -0.0116 +/- 0.0026	g_im= -0.0267 +/- 0.0041
corr= [-0.39]	corr= [-0.76]	corr= [-0.89]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.28299 \pm 0.001433) + (i/2)*(-0.0089649 \pm 0.0024558) [-0.29]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0964 +/- 0.0011	k_re= 0.1031 +/- 0.0010	k_re= 0.1235 +/- 0.0008
k_im= 0.0033 +/- 0.0009	k_im= -0.0031 +/- 0.0008	k_im= -0.0026 +/- 0.0007
corr= [-0.28]	corr= [-0.28]	corr= [-0.29]
g = 0.0028 +/- 0.0159	g = 0.0566 +/- 0.0074	g = 0.0155 +/- 0.0049
arg(g)/pi= 0.0701 +/- 0.8613	arg(g)/pi= -0.0710 +/- 0.0296	arg(g)/pi= 0.2581 +/- 0.1948
g_re= 0.0027 +/- 0.0171	g_re= 0.0551 +/- 0.0067	g_re= 0.0107 +/- 0.0046
g_im= 0.0006 +/- 0.0042	g_im= -0.0125 +/- 0.0061	g_im= 0.0113 +/- 0.0096
corr= [-0.87]	corr= [-0.56]	corr= [-0.78]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.26142 \pm 0.0013796) + (i/2)*(-0.02388 \pm 0.0022549) [-0.31]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0800 +/- 0.0011	k_re= -0.0879 +/- 0.0010	k_re= 0.1110 +/- 0.0008
k_im= -0.0098 +/- 0.0009	k_im= 0.0089 +/- 0.0008	k_im= -0.0070 +/- 0.0007
corr= [-0.28]	corr= [-0.29]	corr= [-0.31]
g = 0.0050 +/- 0.0077	g = 0.0310 +/- 0.0053	g = 0.0889 +/- 0.0039
arg(g)/pi= 0.2100 +/- 0.4272	arg(g)/pi= -0.1153 +/- 0.0195	arg(g)/pi= -0.0794 +/- 0.0066
g_re= 0.0039 +/- 0.0090	g_re= 0.0290 +/- 0.0053	g_re= 0.0862 +/- 0.0034
g_im= 0.0030 +/- 0.0047	g_im= -0.0110 +/- 0.0020	g_im= -0.0220 +/- 0.0026
corr= [-0.00]	corr= [-0.47]	corr= [-0.88]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28308 \pm 0.0012502) + (i/2)*(-0.010518 \pm 0.0027984) [-0.61]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0964 +/- 0.0009	k_re= 0.1031 +/- 0.0009	k_re= -0.1236 +/- 0.0007
k_im= -0.0039 +/- 0.0010	k_im= -0.0036 +/- 0.0010	k_im= 0.0030 +/- 0.0008
corr= [-0.61]	corr= [-0.61]	corr= [-0.61]
g = 0.0042 +/- 0.0196	g = 0.0657 +/- 0.0088	g = 0.0155 +/- 0.0051
arg(g)/pi= 0.0575 +/- 0.4444	arg(g)/pi= -0.0628 +/- 0.0117	arg(g)/pi= -0.2275 +/- 0.2237
g_re= 0.0042 +/- 0.0203	g_re= 0.0644 +/- 0.0086	g_re= 0.0117 +/- 0.0106
g_im= 0.0008 +/- 0.0028	g_im= -0.0129 +/- 0.0033	g_im= -0.0102 +/- 0.0057

corr= [-0.73] | corr= [-0.67] | corr= [ 0.86] |

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\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.25963 +/- 0.0013701)  
+ (i/2)\*(-0.02811 +/- 0.0030716) [-0.17]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0787 +/- 0.0011	k_re= 0.0866 +/- 0.0010	k_re= 0.1100 +/- 0.0008
k_im= -0.0116 +/- 0.0012	k_im= -0.0105 +/- 0.0011	k_im= -0.0083 +/- 0.0009
corr= [-0.19]	corr= [-0.19]	corr= [-0.18]
g = 0.0043 +/- 0.0075	g = 0.0345 +/- 0.0060	g = 0.0853 +/- 0.0042
arg(g)/pi= 0.1717 +/- 0.4932	arg(g)/pi= -0.1102 +/- 0.0150	arg(g)/pi= -0.1008 +/- 0.0111
g_re= 0.0037 +/- 0.0092	g_re= 0.0324 +/- 0.0056	g_re= 0.0810 +/- 0.0032
g_im= 0.0022 +/- 0.0041	g_im= -0.0117 +/- 0.0027	g_im= -0.0266 +/- 0.0040
corr= [-0.33]	corr= [-0.76]	corr= [-0.89]

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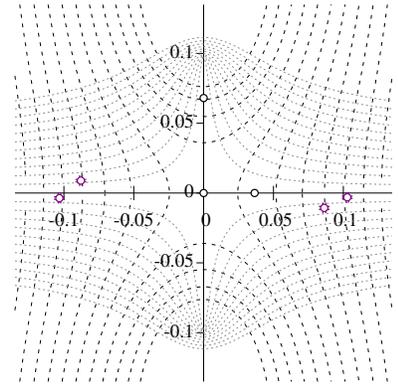
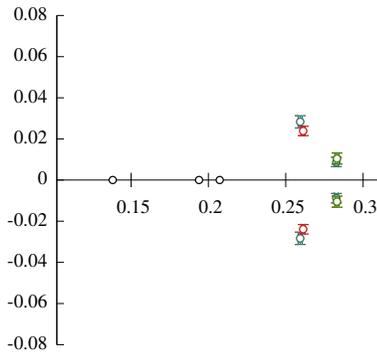
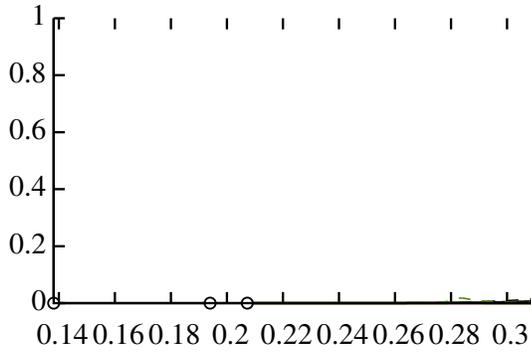
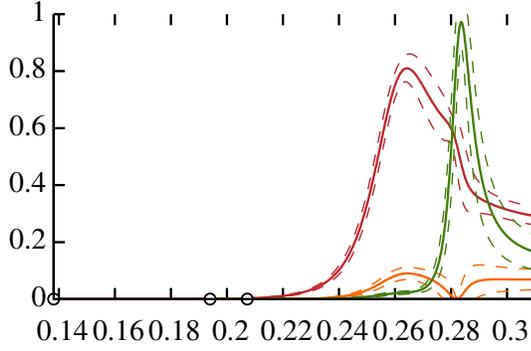
\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = ( 0.283 +/- 0.0014309)  
+ (i/2)\*(-0.0090021 +/- 0.0023422) [-0.28]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0964 +/- 0.0011	k_re= 0.1031 +/- 0.0010	k_re= 0.1235 +/- 0.0008
k_im= -0.0033 +/- 0.0009	k_im= -0.0031 +/- 0.0008	k_im= -0.0026 +/- 0.0007
corr= [-0.28]	corr= [-0.28]	corr= [-0.28]
g = 0.0028 +/- 0.0161	g = 0.0565 +/- 0.0075	g = 0.0157 +/- 0.0049
arg(g)/pi= 0.1033 +/- 0.8639	arg(g)/pi= -0.0707 +/- 0.0295	arg(g)/pi= 0.2583 +/- 0.1904
g_re= 0.0027 +/- 0.0176	g_re= 0.0551 +/- 0.0068	g_re= 0.0108 +/- 0.0045
g_im= 0.0009 +/- 0.0028	g_im= -0.0124 +/- 0.0061	g_im= 0.0114 +/- 0.0096
corr= [-0.67]	corr= [-0.57]	corr= [-0.80]

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# k\_2poles\_free\_geta\_xxxxxc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 29.45 / (34 - 9) = 1.18$

JP2+_g_eta:eta/1^D_2_pole0	0.00012294 +/- 0.40295	1.00	-0.88	-0.01	-0.00	0.00	0.00	-0.02	-0.00	-0.01
JP2+_g_eta:eta/1^D_2_pole1	-0.00017773 +/- 0.68049	1.00	0.01	-0.00	-0.00	0.00	0.04	0.00	0.01	
JP2+_g_kaon:kaon/1^D_2_pole0	-1.0742 +/- 0.15602	1.00	0.17	-0.20	-0.07	0.01	0.20	0.37		
JP2+_g_kaon:kaon/1^D_2_pole1	1.4587 +/- 0.23523	1.00	0.54	-0.83	0.18	0.48	0.51			
JP2+_g_pi:pi/1^D_2_pole0	1.8095 +/- 0.079243	1.00	-0.63	0.12	0.41	0.02				
JP2+_g_pi:pi/1^D_2_pole1	-0.11807 +/- 0.27679	1.00	-0.21	-0.55	-0.19					
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	40.034 +/- 24.537	1.00	-0.08	-0.08						
JP2+_m_pole0	0.26415 +/- 0.0015455	1.00	0.39							
JP2+_m_pole1	0.28351 +/- 0.0013633	1.00								
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0	FIXED								
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0	FIXED								
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	0.0000 +/- 0	FIXED								
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0	FIXED								
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0	FIXED								

## pole singularities

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JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$\text{sqrt}(s)_{\text{pole}} = (0.26125 \pm 0.001227) + (i/2)*(-0.023881 \pm 0.0022824) [-0.26]$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0799 +/- 0.0010	k_re= -0.0878 +/- 0.0009	k_re= 0.1109 +/- 0.0007
k_im= 0.0098 +/- 0.0009	k_im= 0.0089 +/- 0.0008	k_im= -0.0070 +/- 0.0007
corr= [-0.24]	corr= [-0.25]	corr= [-0.25]
g = 0.0005 +/- 0.0063	g = 0.0319 +/- 0.0049	g = 0.0888 +/- 0.0038
arg(g)/pi= -0.1315 +/- 0.0889	arg(g)/pi= -0.1136 +/- 0.0182	arg(g)/pi= -0.0834 +/- 0.0069
g_re= 0.0004 +/- 0.0058	g_re= 0.0299 +/- 0.0048	g_re= 0.0858 +/- 0.0033
g_im= -0.0002 +/- 0.0025	g_im= -0.0111 +/- 0.0020	g_im= -0.0230 +/- 0.0028
corr= [-1.00]	corr= [-0.49]	corr= [-0.91]

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JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28312 \pm 0.0012973) + (i/2)*(-0.010469 \pm 0.0026955) [-0.65]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0965 +/- 0.0010	k_re= 0.1032 +/- 0.0009	k_re= -0.1236 +/- 0.0007
k_im= 0.0038 +/- 0.0010	k_im= -0.0036 +/- 0.0009	k_im= 0.0030 +/- 0.0008
corr= [-0.65]	corr= [-0.65]	corr= [-0.65]
g = 0.0013 +/- 0.0164	g = 0.0661 +/- 0.0092	g = 0.0174 +/- 0.0072
arg(g)/pi= -0.0720 +/- 0.1026	arg(g)/pi= -0.0611 +/- 0.0131	arg(g)/pi= -0.1647 +/- 0.1949
g_re= 0.0012 +/- 0.0160	g_re= 0.0649 +/- 0.0090	g_re= 0.0151 +/- 0.0112
g_im= -0.0003 +/- 0.0037	g_im= -0.0126 +/- 0.0033	g_im= -0.0086 +/- 0.0063
corr= [-0.99]	corr= [-0.56]	corr= [ 0.87]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.25935 \pm 0.0012983) + (i/2)*(-0.028305 \pm 0.0030035) [-0.06]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0785 +/- 0.0011	k_re= 0.0864 +/- 0.0010	k_re= 0.1098 +/- 0.0008
k_im= 0.0117 +/- 0.0012	k_im= -0.0106 +/- 0.0011	k_im= -0.0084 +/- 0.0009
corr= [-0.09]	corr= [-0.08]	corr= [-0.07]
g = 0.0005 +/- 0.0071	g = 0.0352 +/- 0.0054	g = 0.0849 +/- 0.0042
arg(g)/pi= -0.1306 +/- 0.2504	arg(g)/pi= -0.1137 +/- 0.0147	arg(g)/pi= -0.1067 +/- 0.0116
g_re= 0.0005 +/- 0.0065	g_re= 0.0329 +/- 0.0050	g_re= 0.0802 +/- 0.0031
g_im= -0.0002 +/- 0.0029	g_im= -0.0123 +/- 0.0027	g_im= -0.0279 +/- 0.0042
corr= [-0.99]	corr= [-0.76]	corr= [-0.87]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.2827 \pm 0.0012747) + (i/2)*(-0.0088061 \pm 0.0022981) [-0.08]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0961 +/- 0.0009	k_re= 0.1029 +/- 0.0009	k_re= 0.1233 +/- 0.0007
k_im= 0.0032 +/- 0.0008	k_im= -0.0030 +/- 0.0008	k_im= -0.0025 +/- 0.0007
corr= [-0.08]	corr= [-0.08]	corr= [-0.08]
g = 0.0011 +/- 0.0144	g = 0.0555 +/- 0.0066	g = 0.0171 +/- 0.0067
arg(g)/pi= -0.0815 +/- 0.2986	arg(g)/pi= -0.0794 +/- 0.0333	arg(g)/pi= 0.3056 +/- 0.1627
g_re= 0.0011 +/- 0.0139	g_re= 0.0537 +/- 0.0057	g_re= 0.0098 +/- 0.0042
g_im= -0.0003 +/- 0.0038	g_im= -0.0137 +/- 0.0067	g_im= 0.0140 +/- 0.0102
corr= [-0.96]	corr= [-0.58]	corr= [-0.77]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.26125 \pm 0.0012273) + (i/2)*(-0.023883 \pm 0.0022823) [-0.26]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0799 +/- 0.0010	k_re= -0.0878 +/- 0.0009	k_re= 0.1109 +/- 0.0007
k_im= -0.0098 +/- 0.0009	k_im= 0.0089 +/- 0.0008	k_im= -0.0070 +/- 0.0007
corr= [-0.24]	corr= [-0.25]	corr= [-0.25]
g = 0.0005 +/- 0.0064	g = 0.0319 +/- 0.0049	g = 0.0888 +/- 0.0038
arg(g)/pi= -0.1226 +/- 0.0892	arg(g)/pi= -0.1136 +/- 0.0182	arg(g)/pi= -0.0834 +/- 0.0069
g_re= 0.0004 +/- 0.0060	g_re= 0.0299 +/- 0.0048	g_re= 0.0858 +/- 0.0033
g_im= -0.0002 +/- 0.0024	g_im= -0.0111 +/- 0.0020	g_im= -0.0230 +/- 0.0028
corr= [-1.00]	corr= [-0.49]	corr= [-0.91]

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28312 \pm 0.0012964) + (i/2)*(-0.01048 \pm 0.0027023) [-0.65]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0965 +/- 0.0010	k_re= 0.1032 +/- 0.0009	k_re= -0.1236 +/- 0.0007
k_im= -0.0038 +/- 0.0010	k_im= -0.0036 +/- 0.0009	k_im= 0.0030 +/- 0.0008
corr= [-0.65]	corr= [-0.65]	corr= [-0.65]
g = 0.0013 +/- 0.0167	g = 0.0661 +/- 0.0092	g = 0.0174 +/- 0.0072
arg(g)/pi= -0.0486 +/- 0.1037	arg(g)/pi= -0.0612 +/- 0.0133	arg(g)/pi= -0.1648 +/- 0.1951
g_re= 0.0013 +/- 0.0165	g_re= 0.0649 +/- 0.0090	g_re= 0.0152 +/- 0.0112
g_im= -0.0002 +/- 0.0026	g_im= -0.0126 +/- 0.0034	g_im= -0.0086 +/- 0.0063

corr= [-0.99] | corr= [-0.55] | corr= [ 0.87] |

\*\*\*\*\*

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.25935 +/- 0.0012985)  
+ (i/2)\*(-0.028307 +/- 0.003003) [-0.06]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0785 +/- 0.0011	k_re= 0.0864 +/- 0.0010	k_re= 0.1098 +/- 0.0008
k_im= -0.0117 +/- 0.0012	k_im= -0.0106 +/- 0.0011	k_im= -0.0084 +/- 0.0009
corr= [-0.09]	corr= [-0.08]	corr= [-0.07]
g = 0.0005 +/- 0.0072	g = 0.0352 +/- 0.0054	g = 0.0849 +/- 0.0042
arg(g)/pi= -0.1230 +/- 0.2504	arg(g)/pi= -0.1137 +/- 0.0147	arg(g)/pi= -0.1067 +/- 0.0116
g_re= 0.0005 +/- 0.0067	g_re= 0.0329 +/- 0.0050	g_re= 0.0802 +/- 0.0031
g_im= -0.0002 +/- 0.0028	g_im= -0.0123 +/- 0.0027	g_im= -0.0279 +/- 0.0042
corr= [-0.99]	corr= [-0.76]	corr= [-0.87]

\*\*\*\*\*

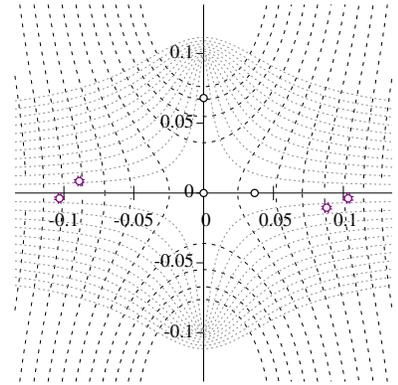
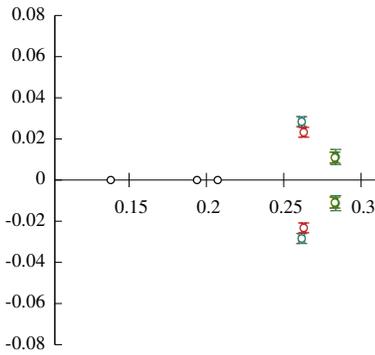
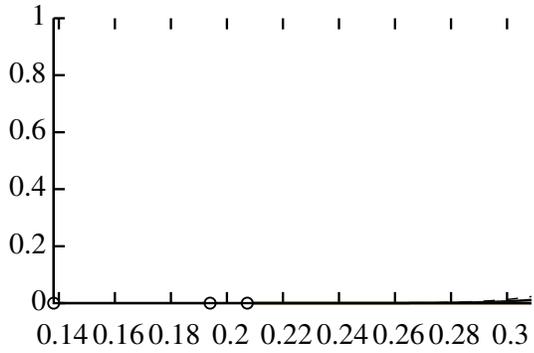
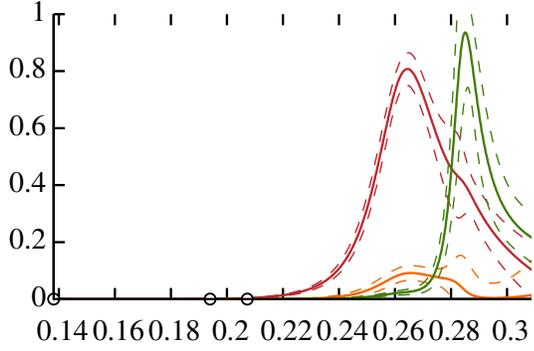
\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = ( 0.2827 +/- 0.0012712)  
+ (i/2)\*(-0.0088144 +/- 0.0023) [-0.08]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0961 +/- 0.0009	k_re= 0.1029 +/- 0.0009	k_re= 0.1233 +/- 0.0007
k_im= -0.0032 +/- 0.0008	k_im= -0.0030 +/- 0.0008	k_im= -0.0025 +/- 0.0007
corr= [-0.08]	corr= [-0.08]	corr= [-0.08]
g = 0.0011 +/- 0.0146	g = 0.0555 +/- 0.0066	g = 0.0171 +/- 0.0067
arg(g)/pi= -0.0585 +/- 0.2994	arg(g)/pi= -0.0795 +/- 0.0333	arg(g)/pi= 0.3055 +/- 0.1629
g_re= 0.0011 +/- 0.0143	g_re= 0.0537 +/- 0.0057	g_re= 0.0098 +/- 0.0042
g_im= -0.0002 +/- 0.0029	g_im= -0.0137 +/- 0.0067	g_im= 0.0140 +/- 0.0102
corr= [-0.93]	corr= [-0.58]	corr= [-0.76]

\*\*\*\*\*

# k\_2poles\_ssxxxs\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 26.76 / (34 - 9) = 1.07$

JP2+_g_kaon:kaon/1^D_2_pole0	-1.0500 +/- 0.17567	1.00	0.19	-0.22	0.29	0.05	-0.12	-0.03	0.33	0.40
JP2+_g_kaon:kaon/1^D_2_pole1	1.5299 +/- 0.21221	1.00	0.10	0.22	0.13	-0.49	0.11	0.26	0.51	
JP2+_g_pi:pi/1^D_2_pole0	1.7596 +/- 0.084889		1.00	-0.64	0.04	0.47	-0.02	-0.07	-0.42	
JP2+_g_pi:pi/1^D_2_pole1	0.23679 +/- 0.39265			1.00	-0.02	-0.86	-0.03	0.14	0.65	
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order1	552.36 +/- 302.65				1.00	-0.03	0.15	-0.09	-0.05	
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order1	-887.24 +/- 1478.6					1.00	0.08	-0.16	-0.56	
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order1	612.42 +/- 307.08						1.00	0.22	-0.06	
JP2+_m_pole0	0.26448 +/- 0.0009868							1.00	0.30	
JP2+_m_pole1	0.28491 +/- 0.0019192								1.00	
JP2+_g_eta:eta/1^D_2_pole0	0.0000 +/- 0									FIXED
JP2+_g_eta:eta/1^D_2_pole1	0.0000 +/- 0									FIXED
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	0.0000 +/- 0									FIXED
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0									FIXED
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0									FIXED
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0									FIXED
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order1	0.0000 +/- 0									FIXED
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	0.0000 +/- 0									FIXED
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	0.0000 +/- 0									FIXED
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0									FIXED
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0									FIXED

## pole singularities

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$\text{sqrt}(s)_{\text{pole}} = ( 0.2629 +/- 0.0012733 )$   
 $+ (i/2)*(-0.023227 +/- 0.0023595) [-0.10]$

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= -0.0812 +/- 0.0010	k_im= 0.0094 +/- 0.0009	k_re= -0.0890 +/- 0.0009	k_im= 0.0086 +/- 0.0009	k_re= 0.1119 +/- 0.0007	k_im= -0.0068 +/- 0.0007
corr= [-0.09]		corr= [-0.09]		corr= [-0.10]	
g = 0.0000 +/- nan	g = 0.0307 +/- 0.0058	g = 0.0904 +/- 0.0048			
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.0818 +/- 0.0765	arg(g)/pi= 0.9435 +/- 0.0132			

```

-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0297 +/- 0.0060 | g_re= -0.0890 +/- 0.0050 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0078 +/- 0.0072 | g_im= 0.0160 +/- 0.0035 |
corr= [ 0.00] | corr= [ 0.18] | corr= [ 0.26] |
*****

```

```

*****
JP=2+ || eta:eta/1^D_2[+] kaon:kaon/1^D_2[-] pi:pi/1^D_2[+]

```

```

sqrt(s)_pole = (0.28306 +/- 0.0013665)
               + (i/2)*(-0.01094 +/- 0.0026603) [-0.15]

```

```

-----|-----|-----|
eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= -0.0964 +/- 0.0010 | k_re= 0.1031 +/- 0.0009 | k_re= -0.1235 +/- 0.0008 |
k_im= 0.0040 +/- 0.0010 | k_im= -0.0038 +/- 0.0009 | k_im= 0.0031 +/- 0.0008 |
corr= [-0.15] | corr= [-0.15] | corr= [-0.15] |
-----|-----|-----|
|g|= 0.0000 +/- nan | |g|= 0.0675 +/- 0.0073 | |g|= 0.0123 +/- 0.0057 |
arg(g)/pi= 0.0000 +/- nan | arg(g)/pi= -0.0823 +/- 0.0144 | arg(g)/pi= 0.4300 +/- 0.4678 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0652 +/- 0.0066 | g_re= 0.0027 +/- 0.0181 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0172 +/- 0.0044 | g_im= 0.0120 +/- 0.0056 |
corr= [ 0.00] | corr= [-0.80] | corr= [-0.32] |
*****

```

```

*****
JP=2+ || eta:eta/1^D_2[+] kaon:kaon/1^D_2[-] pi:pi/1^D_2[-]

```

```

sqrt(s)_pole = (0.26159 +/- 0.001785)
               + (i/2)*(-0.028401 +/- 0.0024218) [ 0.03]

```

```

-----|-----|-----|
eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= -0.0803 +/- 0.0014 | k_re= 0.0881 +/- 0.0013 | k_re= 0.1112 +/- 0.0010 |
k_im= 0.0116 +/- 0.0010 | k_im= -0.0105 +/- 0.0009 | k_im= -0.0084 +/- 0.0007 |
corr= [ 0.10] | corr= [ 0.09] | corr= [ 0.05] |
-----|-----|-----|
|g|= 0.0000 +/- nan | |g|= 0.0365 +/- 0.0075 | |g|= 0.0897 +/- 0.0057 |
arg(g)/pi= 0.0000 +/- nan | arg(g)/pi= -0.0717 +/- 0.0795 | arg(g)/pi= 0.9267 +/- 0.0185 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0356 +/- 0.0083 | g_re= -0.0874 +/- 0.0062 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0081 +/- 0.0084 | g_im= 0.0205 +/- 0.0046 |
corr= [ 0.00] | corr= [ 0.40] | corr= [ 0.39] |
*****

```

```

*****
JP=2+ || eta:eta/1^D_2[+] kaon:kaon/1^D_2[-] pi:pi/1^D_2[-]

```

```

sqrt(s)_pole = ( 0.2836 +/- 0.001295)
               + (i/2)*(-0.011227 +/- 0.0036346) [-0.35]

```

```

-----|-----|-----|
eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= -0.0968 +/- 0.0010 | k_re= 0.1035 +/- 0.0009 | k_re= 0.1239 +/- 0.0007 |
k_im= 0.0041 +/- 0.0013 | k_im= -0.0038 +/- 0.0012 | k_im= -0.0032 +/- 0.0010 |
corr= [-0.36] | corr= [-0.36] | corr= [-0.35] |
-----|-----|-----|
|g|= 0.0000 +/- nan | |g|= 0.0629 +/- 0.0095 | |g|= 0.0147 +/- 0.0065 |
arg(g)/pi= 0.0000 +/- nan | arg(g)/pi= -0.0758 +/- 0.0256 | arg(g)/pi= -0.0130 +/- 0.4492 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0611 +/- 0.0083 | g_re= 0.0147 +/- 0.0061 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0148 +/- 0.0068 | g_im= -0.0006 +/- 0.0209 |
corr= [ 0.00] | corr= [-0.84] | corr= [-0.40] |
*****

```

```

*****
JP=2+ || eta:eta/1^D_2[-] kaon:kaon/1^D_2[+] pi:pi/1^D_2[-]

```

```

sqrt(s)_pole = ( 0.2629 +/- 0.0012733)
               + (i/2)*(-0.023227 +/- 0.0023595) [-0.10]

```

```

-----|-----|-----|
eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= 0.0812 +/- 0.0010 | k_re= -0.0890 +/- 0.0009 | k_re= 0.1119 +/- 0.0007 |
k_im= -0.0094 +/- 0.0009 | k_im= 0.0086 +/- 0.0009 | k_im= -0.0068 +/- 0.0007 |
corr= [-0.09] | corr= [-0.09] | corr= [-0.10] |
-----|-----|-----|
|g|= 0.0000 +/- nan | |g|= 0.0307 +/- 0.0058 | |g|= 0.0904 +/- 0.0048 |
arg(g)/pi= 0.0000 +/- nan | arg(g)/pi= -0.0818 +/- 0.0765 | arg(g)/pi= 0.9435 +/- 0.0132 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0297 +/- 0.0060 | g_re= -0.0890 +/- 0.0050 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0078 +/- 0.0072 | g_im= 0.0160 +/- 0.0035 |
corr= [ 0.00] | corr= [ 0.18] | corr= [ 0.26] |
*****

```

```

*****
JP=2+ || eta:eta/1^D_2[-] kaon:kaon/1^D_2[-] pi:pi/1^D_2[+]

```

```

sqrt(s)_pole = (0.28306 +/- 0.0013665)
               + (i/2)*(-0.01094 +/- 0.0026603) [-0.15]

```

```

-----|-----|-----|
eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= 0.0964 +/- 0.0010 | k_re= 0.1031 +/- 0.0009 | k_re= -0.1235 +/- 0.0008 |
k_im= -0.0040 +/- 0.0010 | k_im= -0.0038 +/- 0.0009 | k_im= 0.0031 +/- 0.0008 |
corr= [-0.15] | corr= [-0.15] | corr= [-0.15] |

```

```

=====|=====|=====|
|g|= 0.0000 +/- nan | |g|= 0.0675 +/- 0.0073 | |g|= 0.0123 +/- 0.0057 |
arg(g)/pi= 0.0000 +/- nan | arg(g)/pi= -0.0823 +/- 0.0144 | arg(g)/pi= 0.4300 +/- 0.4678 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0652 +/- 0.0066 | g_re= 0.0027 +/- 0.0181 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0172 +/- 0.0044 | g_im= 0.0120 +/- 0.0056 |
corr= [ 0.00] | corr= [-0.80] | corr= [-0.32] |
*****

```

```

*****
JP=2+ || eta:eta/1^D_2[-] kaon:kaon/1^D_2[-] pi:pi/1^D_2[-]

```

```

sqrt(s)_pole = (0.26159 +/- 0.001785)
               + (i/2)*(-0.028401 +/- 0.0024218) [ 0.03]

```

```

eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
=====|=====|=====|
k_re= 0.0803 +/- 0.0014 | k_re= 0.0881 +/- 0.0013 | k_re= 0.1112 +/- 0.0010 |
k_im= -0.0116 +/- 0.0010 | k_im= -0.0105 +/- 0.0009 | k_im= -0.0084 +/- 0.0007 |
corr= [ 0.10] | corr= [ 0.09] | corr= [ 0.05] |
-----|-----|-----|
|g|= 0.0000 +/- nan | |g|= 0.0365 +/- 0.0075 | |g|= 0.0897 +/- 0.0057 |
arg(g)/pi= 0.0000 +/- nan | arg(g)/pi= -0.0717 +/- 0.0795 | arg(g)/pi= 0.9267 +/- 0.0185 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0356 +/- 0.0083 | g_re= -0.0874 +/- 0.0062 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0081 +/- 0.0084 | g_im= 0.0205 +/- 0.0046 |
corr= [ 0.00] | corr= [ 0.40] | corr= [ 0.39] |
*****

```

```

*****
JP=2+ || eta:eta/1^D_2[-] kaon:kaon/1^D_2[-] pi:pi/1^D_2[-]

```

```

sqrt(s)_pole = ( 0.2836 +/- 0.001295)
               + (i/2)*(-0.011227 +/- 0.0036346) [-0.35]

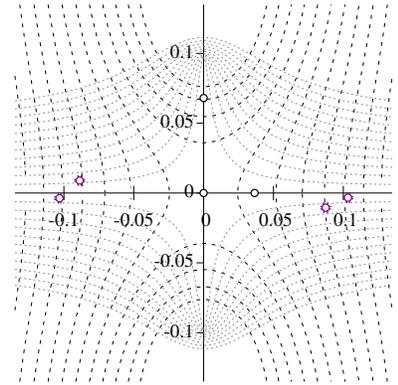
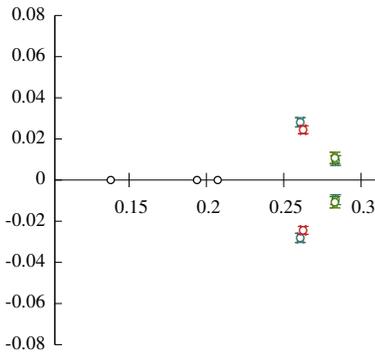
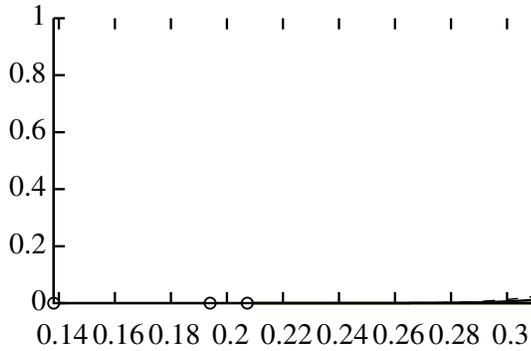
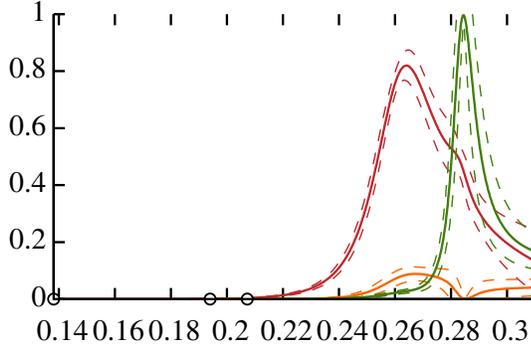
```

```

eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
=====|=====|=====|
k_re= 0.0968 +/- 0.0010 | k_re= 0.1035 +/- 0.0009 | k_re= 0.1239 +/- 0.0007 |
k_im= -0.0041 +/- 0.0013 | k_im= -0.0038 +/- 0.0012 | k_im= -0.0032 +/- 0.0010 |
corr= [-0.36] | corr= [-0.36] | corr= [-0.35] |
-----|-----|-----|
|g|= 0.0000 +/- nan | |g|= 0.0629 +/- 0.0095 | |g|= 0.0147 +/- 0.0065 |
arg(g)/pi= 0.0000 +/- nan | arg(g)/pi= -0.0758 +/- 0.0256 | arg(g)/pi= -0.0130 +/- 0.4492 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0611 +/- 0.0083 | g_re= 0.0147 +/- 0.0061 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0148 +/- 0.0068 | g_im= -0.0006 +/- 0.0209 |
corr= [ 0.00] | corr= [-0.84] | corr= [-0.40] |
*****

```

# k\_2poles\_sxxxxs\_noCM



## parameter values

minimised with chisq/nDoF = 27.08 / (34 - 8) = 1.04

JP2+_g_kaon:kaon/1^D_2_pole0	-1.0442 +/- 0.20649	1.00	0.25	-0.44	0.29	0.00	0.37	0.60	0.53
JP2+_g_kaon:kaon/1^D_2_pole1	1.4752 +/- 0.20577	1.00	0.30	-0.53	0.15	0.10	0.29	0.42	
JP2+_g_pi:pi/1^D_2_pole0	1.8077 +/- 0.091172		1.00	-0.66	0.09	-0.45	-0.28	-0.37	
JP2+_g_pi:pi/1^D_2_pole1	0.050318 +/- 0.21185			1.00	-0.14	0.47	0.08	0.28	
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order1	541.15 +/- 302.71				1.00	0.08	-0.08	-0.08	
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order1	451.24 +/- 380.98					1.00	0.39	0.31	
JP2+_m_pole0	0.26439 +/- 0.0012186						1.00	0.46	
JP2+_m_pole1	0.28435 +/- 0.0016711							1.00	
JP2+_g_eta:eta/1^D_2_pole0	0.0000 +/- 0								FIXED
JP2+_g_eta:eta/1^D_2_pole1	0.0000 +/- 0								FIXED
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	0.0000 +/- 0								FIXED
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_order0	0.0000 +/- 0								FIXED
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_order1	0.0000 +/- 0								FIXED
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0								FIXED
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order1	0.0000 +/- 0								FIXED
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_order0	0.0000 +/- 0								FIXED
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_order1	0.0000 +/- 0								FIXED
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0								FIXED
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order1	0.0000 +/- 0								FIXED
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0								FIXED

## pole singularities

\*\*\*\*\*

JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.26251 +/- 0.0016895)  
+ (i/2)\*(-0.024443 +/- 0.0019027) [-0.13]

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= -0.0809 +/- 0.0014	k_im= 0.0099 +/- 0.0008	k_re= -0.0887 +/- 0.0012	k_im= 0.0090 +/- 0.0007	k_re= 0.1117 +/- 0.0010	k_im= -0.0072 +/- 0.0006
corr= [-0.04]		corr= [-0.06]		corr= [-0.11]	
g = 0.0000 +/- nan	g = 0.0297 +/- 0.0062	g = 0.0918 +/- 0.0041			
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.1328 +/- 0.0256	arg(g)/pi= 0.9353 +/- 0.0155			

```
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0272 +/- 0.0063 | g_re= -0.0899 +/- 0.0045 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0120 +/- 0.0022 | g_im= 0.0185 +/- 0.0041 |
corr= [ 0.00] | corr= [-0.47] | corr= [ 0.37] |
*****
```

```
*****
JP=2+ || eta:eta/1^D_2[+] kaon:kaon/1^D_2[-] pi:pi/1^D_2[+]
```

```
sqrt(s)_pole = (0.28306 +/- 0.0013343)
+ (i/2)*(-0.010786 +/- 0.0027275) [-0.50]
```

```
-----|-----|-----|
eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= -0.0964 +/- 0.0010 | k_re= 0.1031 +/- 0.0009 | k_re= -0.1235 +/- 0.0008 |
k_im= 0.0040 +/- 0.0010 | k_im= -0.0037 +/- 0.0009 | k_im= 0.0031 +/- 0.0008 |
corr= [-0.50] | corr= [-0.50] | corr= [-0.50] |
-----|-----|-----|
|g|= 0.0000 +/- nan | |g|= 0.0666 +/- 0.0077 | |g|= 0.0152 +/- 0.0027 |
arg(g)/pi= 0.0000 +/- nan | arg(g)/pi= -0.0694 +/- 0.0107 | arg(g)/pi= 0.6356 +/- 0.2196 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0651 +/- 0.0073 | g_re= -0.0063 +/- 0.0097 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0144 +/- 0.0033 | g_im= 0.0138 +/- 0.0047 |
corr= [ 0.00] | corr= [-0.79] | corr= [ 0.79] |
*****
```

```
*****
JP=2+ || eta:eta/1^D_2[+] kaon:kaon/1^D_2[-] pi:pi/1^D_2[-]
```

```
sqrt(s)_pole = (0.26068 +/- 0.0019809)
+ (i/2)*(-0.028087 +/- 0.0022803) [ 0.38]
```

```
-----|-----|-----|
eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= -0.0796 +/- 0.0016 | k_re= 0.0874 +/- 0.0014 | k_re= 0.1106 +/- 0.0012 |
k_im= 0.0115 +/- 0.0010 | k_im= -0.0105 +/- 0.0009 | k_im= -0.0083 +/- 0.0007 |
corr= [ 0.46] | corr= [ 0.44] | corr= [ 0.40] |
-----|-----|-----|
|g|= 0.0000 +/- nan | |g|= 0.0333 +/- 0.0060 | |g|= 0.0873 +/- 0.0037 |
arg(g)/pi= 0.0000 +/- nan | arg(g)/pi= -0.1192 +/- 0.0162 | arg(g)/pi= 0.9157 +/- 0.0198 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0310 +/- 0.0056 | g_re= -0.0843 +/- 0.0041 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0122 +/- 0.0027 | g_im= 0.0229 +/- 0.0051 |
corr= [ 0.00] | corr= [-0.75] | corr= [ 0.36] |
*****
```

```
*****
JP=2+ || eta:eta/1^D_2[+] kaon:kaon/1^D_2[-] pi:pi/1^D_2[-]
```

```
sqrt(s)_pole = (0.28349 +/- 0.0016503)
+ (i/2)*(-0.0095062 +/- 0.0024215) [-0.54]
```

```
-----|-----|-----|
eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= -0.0967 +/- 0.0012 | k_re= 0.1034 +/- 0.0011 | k_re= 0.1238 +/- 0.0009 |
k_im= 0.0035 +/- 0.0009 | k_im= -0.0033 +/- 0.0008 | k_im= -0.0027 +/- 0.0007 |
corr= [-0.54] | corr= [-0.54] | corr= [-0.54] |
-----|-----|-----|
|g|= 0.0000 +/- nan | |g|= 0.0579 +/- 0.0076 | |g|= 0.0163 +/- 0.0027 |
arg(g)/pi= 0.0000 +/- nan | arg(g)/pi= -0.0612 +/- 0.0236 | arg(g)/pi= 0.1735 +/- 0.1782 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0568 +/- 0.0073 | g_re= 0.0139 +/- 0.0055 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0111 +/- 0.0049 | g_im= 0.0085 +/- 0.0078 |
corr= [ 0.00] | corr= [-0.49] | corr= [-0.82] |
*****
```

```
*****
JP=2+ || eta:eta/1^D_2[-] kaon:kaon/1^D_2[+] pi:pi/1^D_2[-]
```

```
sqrt(s)_pole = (0.26251 +/- 0.0016895)
+ (i/2)*(-0.024443 +/- 0.0019027) [-0.13]
```

```
-----|-----|-----|
eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= 0.0809 +/- 0.0014 | k_re= -0.0887 +/- 0.0012 | k_re= 0.1117 +/- 0.0010 |
k_im= -0.0099 +/- 0.0008 | k_im= 0.0090 +/- 0.0007 | k_im= -0.0072 +/- 0.0006 |
corr= [-0.04] | corr= [-0.06] | corr= [-0.11] |
-----|-----|-----|
|g|= 0.0000 +/- nan | |g|= 0.0297 +/- 0.0062 | |g|= 0.0918 +/- 0.0041 |
arg(g)/pi= 0.0000 +/- nan | arg(g)/pi= -0.1328 +/- 0.0256 | arg(g)/pi= 0.9353 +/- 0.0155 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0272 +/- 0.0063 | g_re= -0.0899 +/- 0.0045 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0120 +/- 0.0022 | g_im= 0.0185 +/- 0.0041 |
corr= [ 0.00] | corr= [-0.47] | corr= [ 0.37] |
*****
```

```
*****
JP=2+ || eta:eta/1^D_2[-] kaon:kaon/1^D_2[-] pi:pi/1^D_2[+]
```

```
sqrt(s)_pole = (0.28306 +/- 0.0013343)
+ (i/2)*(-0.010786 +/- 0.0027275) [-0.50]
```

```
-----|-----|-----|
eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= 0.0964 +/- 0.0010 | k_re= 0.1031 +/- 0.0009 | k_re= -0.1235 +/- 0.0008 |
k_im= -0.0040 +/- 0.0010 | k_im= -0.0037 +/- 0.0009 | k_im= 0.0031 +/- 0.0008 |
corr= [-0.50] | corr= [-0.50] | corr= [-0.50] |
-----|-----|-----|
```

```

=====|=====|=====|
|g|= 0.0000 +/- nan | |g|= 0.0666 +/- 0.0077 | |g|= 0.0152 +/- 0.0027 |
arg(g)/pi= 0.0000 +/- nan | arg(g)/pi= -0.0694 +/- 0.0107 | arg(g)/pi= 0.6356 +/- 0.2196 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0651 +/- 0.0073 | g_re= -0.0063 +/- 0.0097 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0144 +/- 0.0033 | g_im= 0.0138 +/- 0.0047 |
corr= [ 0.00] | corr= [-0.79] | corr= [ 0.79] |
*****

```

```

*****
JP=2+ || eta:eta/1^D_2[-] kaon:kaon/1^D_2[-] pi:pi/1^D_2[-]

```

```

sqrt(s)_pole = (0.26068 +/- 0.0019809)
               + (i/2)*(-0.028087 +/- 0.0022803) [ 0.38]

```

```

eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
=====|=====|=====|
k_re= 0.0796 +/- 0.0016 | k_re= 0.0874 +/- 0.0014 | k_re= 0.1106 +/- 0.0012 |
k_im= -0.0115 +/- 0.0010 | k_im= -0.0105 +/- 0.0009 | k_im= -0.0083 +/- 0.0007 |
corr= [ 0.46] | corr= [ 0.44] | corr= [ 0.40] |
-----|-----|-----|
|g|= 0.0000 +/- nan | |g|= 0.0333 +/- 0.0060 | |g|= 0.0873 +/- 0.0037 |
arg(g)/pi= 0.0000 +/- nan | arg(g)/pi= -0.1192 +/- 0.0162 | arg(g)/pi= 0.9157 +/- 0.0198 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0310 +/- 0.0056 | g_re= -0.0843 +/- 0.0041 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0122 +/- 0.0027 | g_im= 0.0229 +/- 0.0051 |
corr= [ 0.00] | corr= [-0.75] | corr= [ 0.36] |
*****

```

```

*****
JP=2+ || eta:eta/1^D_2[-] kaon:kaon/1^D_2[-] pi:pi/1^D_2[-]

```

```

sqrt(s)_pole = (0.28349 +/- 0.0016503)
               + (i/2)*(-0.0095062 +/- 0.0024215) [-0.54]

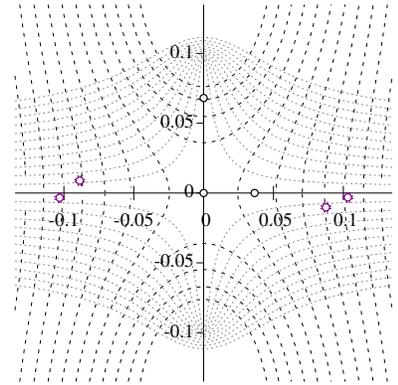
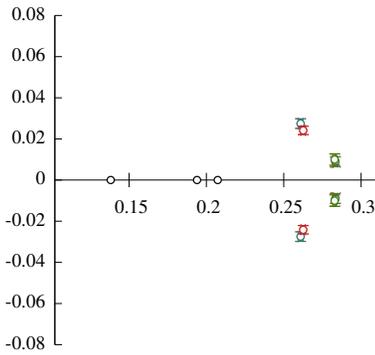
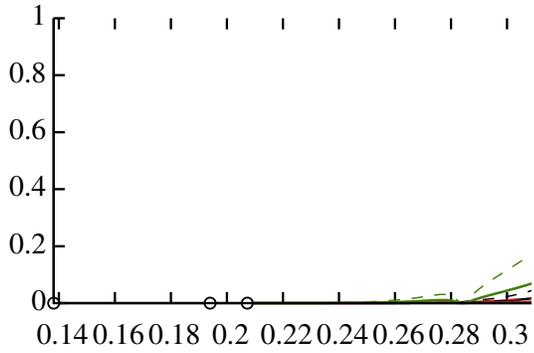
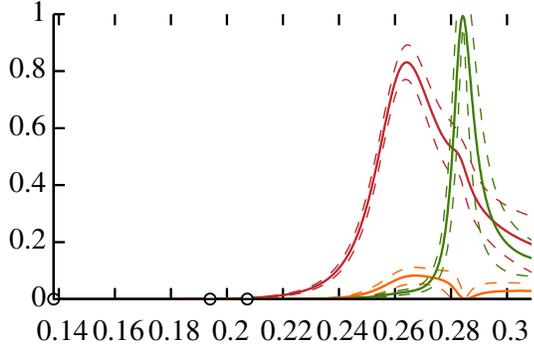
```

```

eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
=====|=====|=====|
k_re= 0.0967 +/- 0.0012 | k_re= 0.1034 +/- 0.0011 | k_re= 0.1238 +/- 0.0009 |
k_im= -0.0035 +/- 0.0009 | k_im= -0.0033 +/- 0.0008 | k_im= -0.0027 +/- 0.0007 |
corr= [-0.54] | corr= [-0.54] | corr= [-0.54] |
-----|-----|-----|
|g|= 0.0000 +/- nan | |g|= 0.0579 +/- 0.0076 | |g|= 0.0163 +/- 0.0027 |
arg(g)/pi= 0.0000 +/- nan | arg(g)/pi= -0.0612 +/- 0.0236 | arg(g)/pi= 0.1735 +/- 0.1782 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0568 +/- 0.0073 | g_re= 0.0139 +/- 0.0055 |
g_im= 0.0000 +/- 0.0000 | g_im= -0.0111 +/- 0.0049 | g_im= 0.0085 +/- 0.0078 |
corr= [ 0.00] | corr= [-0.49] | corr= [-0.82] |
*****

```

# k\_2poles\_xxcxcc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 26.46 / (34 - 10) = 1.10$

JP2+_g_kaon:kaon/1^D_2_pole0	-1.0004 +/- 0.20406	1.00	-0.12	-0.20	0.31	-0.04	0.49	0.23	0.02	0.34	0.26
JP2+_g_kaon:kaon/1^D_2_pole1	1.4069 +/- 0.22917	1.00	0.31	-0.63	0.35	-0.40	-0.08	0.12	0.09	0.39	
JP2+_g_pi:pi/1^D_2_pole0	1.7976 +/- 0.092568	1.00	-0.59	0.13	0.09	-0.16	-0.48	0.00	-0.24		
JP2+_g_pi:pi/1^D_2_pole1	0.069742 +/- 0.21117	1.00	-0.13	0.17	0.38	0.25	-0.06	0.17			
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	37.722 +/- 47.245	1.00	-0.34	0.62	-0.03	-0.10	0.17				
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	139.49 +/- 111.21	1.00	-0.04	-0.10	0.22	-0.15					
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	9.5556 +/- 51.81	1.00	0.01	-0.05	0.22						
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	27.351 +/- 22.773	1.00	0.15	0.14							
JP2+_m_pole0	0.26449 +/- 0.0009598							1.00	0.21		
JP2+_m_pole1	0.28413 +/- 0.0015125								1.00		
JP2+_g_eta:eta/1^D_2_pole0	0.0000 +/- 0									FIXED	
JP2+_g_eta:eta/1^D_2_pole1	0.0000 +/- 0									FIXED	
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	0.0000 +/- 0									FIXED	
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0									FIXED	

## pole singularities

\*\*\*\*\*

JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$\text{sqrt}(s)_{\text{pole}} = (0.26255 \pm 0.0013576) + (i/2) * (-0.024129 \pm 0.0020326)$  [ 0.20]

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= -0.0809 +/- 0.0011	k_re= -0.0887 +/- 0.0010	k_re= 0.1117 +/- 0.0008			
k_im= 0.0098 +/- 0.0008	k_im= 0.0089 +/- 0.0008	k_im= -0.0071 +/- 0.0006			
corr= [ 0.24]	corr= [ 0.23]	corr= [ 0.21]			
g = 0.0032 +/- 0.0051	g = 0.0283 +/- 0.0068	g = 0.0902 +/- 0.0033			
arg(g)/pi= 0.2387 +/- 0.1093	arg(g)/pi= 0.8709 +/- 0.0203	arg(g)/pi= -0.0645 +/- 0.0173			
g_re= 0.0023 +/- 0.0031	g_re= -0.0260 +/- 0.0067	g_re= 0.0884 +/- 0.0034			
g_im= 0.0022 +/- 0.0042	g_im= 0.0112 +/- 0.0023	g_im= -0.0182 +/- 0.0049			
corr= [ 0.98]	corr= [-0.73]	corr= [ 0.14]			

\*\*\*\*\*

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28291 \pm 0.0011527) + (i/2)*(-0.0099972 \pm 0.0027921) [-0.40]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0963 +/- 0.0009	k_re= 0.1030 +/- 0.0008	k_re= -0.1235 +/- 0.0007
k_im= 0.0037 +/- 0.0010	k_im= -0.0034 +/- 0.0010	k_im= 0.0029 +/- 0.0008
corr= [-0.41]	corr= [-0.41]	corr= [-0.41]
g = 0.0105 +/- 0.0084	g = 0.0647 +/- 0.0080	g = 0.0143 +/- 0.0031
arg(g)/pi= 0.3619 +/- 0.0558	arg(g)/pi= -0.0700 +/- 0.0114	arg(g)/pi= 0.6185 +/- 0.2140
g_re= 0.0044 +/- 0.0037	g_re= 0.0632 +/- 0.0076	g_re= -0.0052 +/- 0.0090
g_im= 0.0095 +/- 0.0078	g_im= -0.0141 +/- 0.0035	g_im= 0.0133 +/- 0.0045
corr= [ 0.85]	corr= [-0.81]	corr= [ 0.69]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.26092 \pm 0.0014797) + (i/2)*(-0.027471 \pm 0.0023312) [ 0.40]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0797 +/- 0.0012	k_re= 0.0876 +/- 0.0011	k_re= 0.1108 +/- 0.0009
k_im= 0.0112 +/- 0.0010	k_im= -0.0102 +/- 0.0009	k_im= -0.0081 +/- 0.0007
corr= [ 0.43]	corr= [ 0.42]	corr= [ 0.41]
g = 0.0015 +/- 0.0049	g = 0.0317 +/- 0.0071	g = 0.0863 +/- 0.0032
arg(g)/pi= 0.1499 +/- 0.3747	arg(g)/pi= -0.1181 +/- 0.0144	arg(g)/pi= 0.9183 +/- 0.0184
g_re= 0.0014 +/- 0.0036	g_re= 0.0296 +/- 0.0067	g_re= -0.0834 +/- 0.0031
g_im= 0.0007 +/- 0.0038	g_im= -0.0115 +/- 0.0027	g_im= 0.0219 +/- 0.0050
corr= [ 0.99]	corr= [-0.84]	corr= [ 0.06]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.28336 \pm 0.0013831) + (i/2)*(-0.0089925 \pm 0.0023757) [-0.47]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0966 +/- 0.0010	k_re= 0.1033 +/- 0.0010	k_re= 0.1237 +/- 0.0008
k_im= 0.0033 +/- 0.0009	k_im= -0.0031 +/- 0.0008	k_im= -0.0026 +/- 0.0007
corr= [-0.46]	corr= [-0.46]	corr= [-0.46]
g = 0.0095 +/- 0.0080	g = 0.0571 +/- 0.0075	g = 0.0152 +/- 0.0030
arg(g)/pi= 0.3903 +/- 0.0389	arg(g)/pi= -0.0594 +/- 0.0219	arg(g)/pi= 0.1463 +/- 0.1886
g_re= 0.0032 +/- 0.0028	g_re= 0.0561 +/- 0.0071	g_re= 0.0136 +/- 0.0050
g_im= 0.0089 +/- 0.0076	g_im= -0.0106 +/- 0.0046	g_im= 0.0068 +/- 0.0081
corr= [ 0.90]	corr= [-0.59]	corr= [-0.74]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.26257 \pm 0.0013525) + (i/2)*(-0.024133 \pm 0.002041) [ 0.20]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0810 +/- 0.0011	k_re= -0.0887 +/- 0.0010	k_re= 0.1117 +/- 0.0008
k_im= -0.0098 +/- 0.0008	k_im= 0.0089 +/- 0.0008	k_im= -0.0071 +/- 0.0006
corr= [ 0.23]	corr= [ 0.23]	corr= [ 0.21]
g = 0.0033 +/- 0.0053	g = 0.0286 +/- 0.0066	g = 0.0903 +/- 0.0033
arg(g)/pi= 0.2447 +/- 0.1192	arg(g)/pi= 0.8668 +/- 0.0237	arg(g)/pi= -0.0644 +/- 0.0173
g_re= 0.0023 +/- 0.0031	g_re= -0.0261 +/- 0.0066	g_re= 0.0885 +/- 0.0033
g_im= 0.0023 +/- 0.0044	g_im= 0.0116 +/- 0.0021	g_im= -0.0181 +/- 0.0049
corr= [ 0.97]	corr= [-0.61]	corr= [ 0.13]

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28309 \pm 0.0012011) + (i/2)*(-0.0096228 \pm 0.0030182) [-0.29]$$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0964 +/- 0.0009	k_re= 0.1031 +/- 0.0008	k_re= -0.1236 +/- 0.0007
k_im= -0.0035 +/- 0.0011	k_im= -0.0033 +/- 0.0010	k_im= 0.0028 +/- 0.0009
corr= [-0.30]	corr= [-0.30]	corr= [-0.30]
g = 0.0102 +/- 0.0076	g = 0.0623 +/- 0.0101	g = 0.0138 +/- 0.0035
arg(g)/pi= 0.3963 +/- 0.0422	arg(g)/pi= -0.0599 +/- 0.0181	arg(g)/pi= 0.6283 +/- 0.2134
g_re= 0.0033 +/- 0.0022	g_re= 0.0612 +/- 0.0094	g_re= -0.0054 +/- 0.0086
g_im= 0.0097 +/- 0.0074	g_im= -0.0116 +/- 0.0050	g_im= 0.0127 +/- 0.0048

corr= [ 0.82] | corr= [-0.86] | corr= [ 0.63] |

\*\*\*\*\*

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.26092 +/- 0.0014807)  
+ (i/2)\*(-0.027477 +/- 0.0023362) [ 0.39]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0797 +/- 0.0012	k_re= 0.0876 +/- 0.0011	k_re= 0.1108 +/- 0.0009
k_im= -0.0112 +/- 0.0010	k_im= -0.0102 +/- 0.0009	k_im= -0.0081 +/- 0.0007
corr= [ 0.42]	corr= [ 0.41]	corr= [ 0.40]
g = 0.0016 +/- 0.0049	g = 0.0317 +/- 0.0071	g = 0.0863 +/- 0.0033
arg(g)/pi= 0.1610 +/- 0.3690	arg(g)/pi= -0.1160 +/- 0.0146	arg(g)/pi= 0.9181 +/- 0.0183
g_re= 0.0014 +/- 0.0035	g_re= 0.0296 +/- 0.0067	g_re= -0.0835 +/- 0.0032
g_im= 0.0008 +/- 0.0039	g_im= -0.0113 +/- 0.0028	g_im= 0.0220 +/- 0.0050
corr= [ 0.99]	corr= [-0.83]	corr= [ 0.04]

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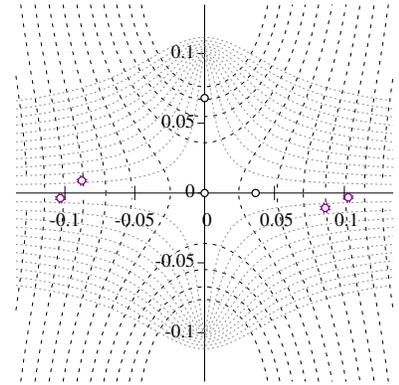
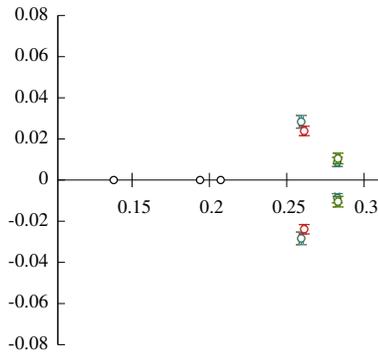
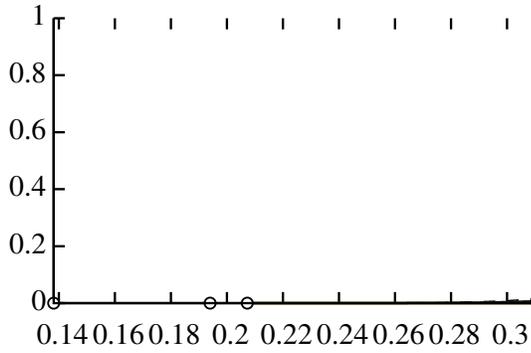
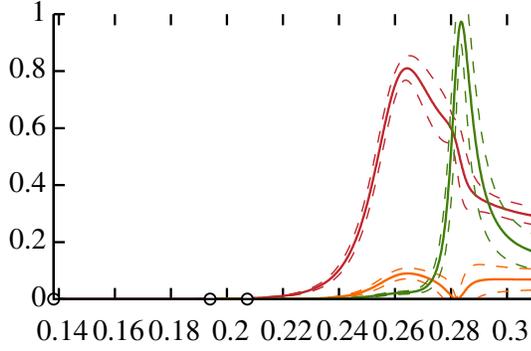
\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.28348 +/- 0.001413)  
+ (i/2)\*(-0.0086427 +/- 0.0024817) [-0.38]

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= 0.0967 +/- 0.0010	k_re= 0.1034 +/- 0.0010	k_re= 0.1238 +/- 0.0008
k_im= -0.0032 +/- 0.0009	k_im= -0.0030 +/- 0.0008	k_im= -0.0025 +/- 0.0007
corr= [-0.38]	corr= [-0.38]	corr= [-0.38]
g = 0.0092 +/- 0.0072	g = 0.0549 +/- 0.0083	g = 0.0146 +/- 0.0036
arg(g)/pi= 0.4229 +/- 0.0488	arg(g)/pi= -0.0513 +/- 0.0276	arg(g)/pi= 0.1554 +/- 0.1871
g_re= 0.0022 +/- 0.0018	g_re= 0.0542 +/- 0.0078	g_re= 0.0129 +/- 0.0050
g_im= 0.0090 +/- 0.0071	g_im= -0.0088 +/- 0.0056	g_im= 0.0068 +/- 0.0078
corr= [ 0.66]	corr= [-0.69]	corr= [-0.63]

\*\*\*\*\*

# k\_2poles\_xxxxxc



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 29.45 / (34 - 7) = 1.09$

JP2+_g_kaon:kaon/1^D_2_pole0	-1.0741 +/- 0.15654	1.00	0.17	-0.20	-0.08	0.01	0.22	0.38
JP2+_g_kaon:kaon/1^D_2_pole1	1.4593 +/- 0.2346	1.00	0.53	-0.82	0.18	0.47	0.51	
JP2+_g_pi:pi/1^D_2_pole0	1.8096 +/- 0.078596		1.00	-0.62	0.12	0.39	0.01	
JP2+_g_pi:pi/1^D_2_pole1	-0.11870 +/- 0.27544			1.00	-0.22	-0.55	-0.19	
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	40.046 +/- 24.512				1.00	-0.08	-0.08	
JP2+_m_pole0	0.26415 +/- 0.0015188					1.00	0.39	
JP2+_m_pole1	0.28352 +/- 0.0013639						1.00	
JP2+_g_eta:eta/1^D_2_pole0	0.0000 +/- 0							FIXED
JP2+_g_eta:eta/1^D_2_pole1	0.0000 +/- 0							FIXED
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0							FIXED
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0							FIXED
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	0.0000 +/- 0							FIXED
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0							FIXED
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0							FIXED

## pole singularities

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\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$\text{sqrt}(s)_{\text{pole}} = (0.26125 \pm 0.0012331) + (i/2)(-0.023887 \pm 0.0022774) [-0.31]$

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= -0.0799 +/- 0.0010	k_re= -0.0878 +/- 0.0009	k_re= 0.1109 +/- 0.0007			
k_im= 0.0098 +/- 0.0009	k_im= 0.0089 +/- 0.0008	k_im= -0.0070 +/- 0.0007			
corr= [-0.30]	corr= [-0.30]	corr= [-0.31]			
g = 0.0000 +/- nan	g = 0.0319 +/- 0.0049	g = 0.0888 +/- 0.0039			
arg(g)/pi= 0.0000 +/- nan	arg(g)/pi= -0.1135 +/- 0.0173	arg(g)/pi= 0.9166 +/- 0.0068			
g_re= 0.0000 +/- 0.0000	g_re= 0.0299 +/- 0.0049	g_re= -0.0858 +/- 0.0034			
g_im= 0.0000 +/- 0.0000	g_im= -0.0111 +/- 0.0019	g_im= 0.0230 +/- 0.0028			
corr= [ 0.00]	corr= [-0.51]	corr= [-0.92]			

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\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28312 \pm 0.0012977) + (i/2)*(-0.010478 \pm 0.0025876) [-0.61]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re= -0.0965 +/- 0.0010			k_re= 0.1032 +/- 0.0009			k_re= -0.1236 +/- 0.0007		
k_im= 0.0038 +/- 0.0009			k_im= -0.0036 +/- 0.0009			k_im= 0.0030 +/- 0.0007		
corr= [-0.60]			corr= [-0.61]			corr= [-0.61]		
g = 0.0000 +/- nan			g = 0.0661 +/- 0.0087			g = 0.0174 +/- 0.0069		
arg(g)/pi= 0.0000 +/- nan			arg(g)/pi= -0.0611 +/- 0.0132			arg(g)/pi= 0.8357 +/- 0.1884		
g_re= 0.0000 +/- 0.0000			g_re= 0.0649 +/- 0.0085			g_re= -0.0152 +/- 0.0108		
g_im= 0.0000 +/- 0.0000			g_im= -0.0126 +/- 0.0033			g_im= 0.0086 +/- 0.0061		
corr= [ 0.00]			corr= [-0.56]			corr= [ 0.88]		

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.25935 \pm 0.0013291) + (i/2)*(-0.028313 \pm 0.0030811) [-0.06]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re= -0.0785 +/- 0.0011			k_re= 0.0864 +/- 0.0010			k_re= 0.1098 +/- 0.0008		
k_im= 0.0117 +/- 0.0013			k_im= -0.0106 +/- 0.0011			k_im= -0.0084 +/- 0.0009		
corr= [-0.09]			corr= [-0.08]			corr= [-0.07]		
g = 0.0000 +/- nan			g = 0.0352 +/- 0.0054			g = 0.0849 +/- 0.0042		
arg(g)/pi= 0.0000 +/- nan			arg(g)/pi= -0.1136 +/- 0.0144			arg(g)/pi= 0.8933 +/- 0.0119		
g_re= 0.0000 +/- 0.0000			g_re= 0.0330 +/- 0.0049			g_re= -0.0802 +/- 0.0030		
g_im= 0.0000 +/- 0.0000			g_im= -0.0123 +/- 0.0027			g_im= 0.0280 +/- 0.0043		
corr= [ 0.00]			corr= [-0.79]			corr= [-0.88]		

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.2827 \pm 0.001429) + (i/2)*(-0.0088138 \pm 0.0022255) [-0.17]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re= -0.0961 +/- 0.0011			k_re= 0.1029 +/- 0.0010			k_re= 0.1233 +/- 0.0008		
k_im= 0.0032 +/- 0.0008			k_im= -0.0030 +/- 0.0008			k_im= -0.0025 +/- 0.0006		
corr= [-0.16]			corr= [-0.16]			corr= [-0.16]		
g = 0.0000 +/- nan			g = 0.0555 +/- 0.0066			g = 0.0171 +/- 0.0064		
arg(g)/pi= 0.0000 +/- nan			arg(g)/pi= -0.0795 +/- 0.0313			arg(g)/pi= 0.3059 +/- 0.1522		
g_re= 0.0000 +/- 0.0000			g_re= 0.0537 +/- 0.0059			g_re= 0.0098 +/- 0.0039		
g_im= 0.0000 +/- 0.0000			g_im= -0.0137 +/- 0.0062			g_im= 0.0140 +/- 0.0096		
corr= [ 0.00]			corr= [-0.49]			corr= [-0.75]		

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.26125 \pm 0.0012331) + (i/2)*(-0.023887 \pm 0.0022774) [-0.31]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re= 0.0799 +/- 0.0010			k_re= -0.0878 +/- 0.0009			k_re= 0.1109 +/- 0.0007		
k_im= -0.0098 +/- 0.0009			k_im= 0.0089 +/- 0.0008			k_im= -0.0070 +/- 0.0007		
corr= [-0.30]			corr= [-0.30]			corr= [-0.31]		
g = 0.0000 +/- nan			g = 0.0319 +/- 0.0049			g = 0.0888 +/- 0.0039		
arg(g)/pi= 0.0000 +/- nan			arg(g)/pi= -0.1135 +/- 0.0173			arg(g)/pi= 0.9166 +/- 0.0068		
g_re= 0.0000 +/- 0.0000			g_re= 0.0299 +/- 0.0049			g_re= -0.0858 +/- 0.0034		
g_im= 0.0000 +/- 0.0000			g_im= -0.0111 +/- 0.0019			g_im= 0.0230 +/- 0.0028		
corr= [ 0.00]			corr= [-0.51]			corr= [-0.92]		

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28312 \pm 0.0012977) + (i/2)*(-0.010478 \pm 0.0025876) [-0.61]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re= 0.0965 +/- 0.0010			k_re= 0.1032 +/- 0.0009			k_re= -0.1236 +/- 0.0007		
k_im= -0.0038 +/- 0.0009			k_im= -0.0036 +/- 0.0009			k_im= 0.0030 +/- 0.0007		
corr= [-0.60]			corr= [-0.61]			corr= [-0.61]		
g = 0.0000 +/- nan			g = 0.0661 +/- 0.0087			g = 0.0174 +/- 0.0069		
arg(g)/pi= 0.0000 +/- nan			arg(g)/pi= -0.0611 +/- 0.0132			arg(g)/pi= 0.8357 +/- 0.1884		
g_re= 0.0000 +/- 0.0000			g_re= 0.0649 +/- 0.0085			g_re= -0.0152 +/- 0.0108		
g_im= 0.0000 +/- 0.0000			g_im= -0.0126 +/- 0.0033			g_im= 0.0086 +/- 0.0061		

corr= [ 0.00] | corr= [-0.56] | corr= [ 0.88] |

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\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.25935 +/- 0.0013291)  
+ (i/2)\*(-0.028313 +/- 0.0030811) [-0.06]

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= 0.0785 +/- 0.0011		k_re= 0.0864 +/- 0.0010		k_re= 0.1098 +/- 0.0008	
k_im= -0.0117 +/- 0.0013		k_im= -0.0106 +/- 0.0011		k_im= -0.0084 +/- 0.0009	
corr= [-0.09]		corr= [-0.08]		corr= [-0.07]	
-----		-----		-----	
g = 0.0000 +/- nan		g = 0.0352 +/- 0.0054		g = 0.0849 +/- 0.0042	
arg(g)/pi= 0.0000 +/- nan		arg(g)/pi= -0.1136 +/- 0.0144		arg(g)/pi= 0.8933 +/- 0.0119	
-----		-----		-----	
g_re= 0.0000 +/- 0.0000		g_re= 0.0330 +/- 0.0049		g_re= -0.0802 +/- 0.0030	
g_im= 0.0000 +/- 0.0000		g_im= -0.0123 +/- 0.0027		g_im= 0.0280 +/- 0.0043	
corr= [ 0.00]		corr= [-0.79]		corr= [-0.88]	

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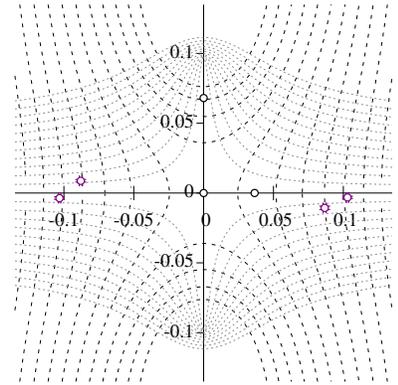
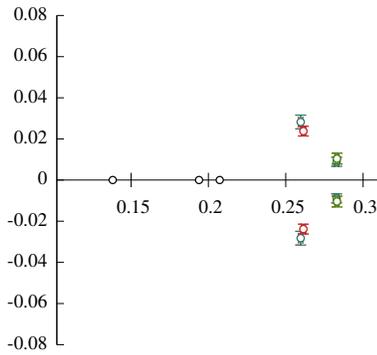
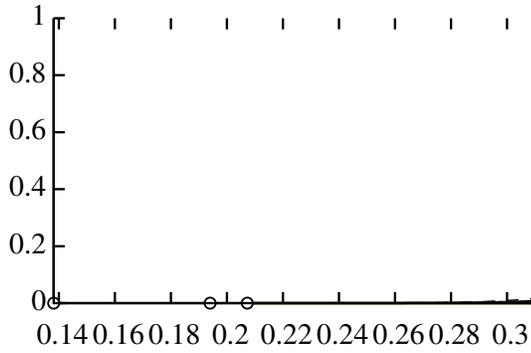
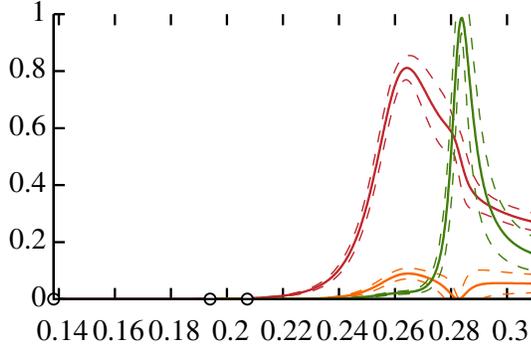
\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = ( 0.2827 +/- 0.001429)  
+ (i/2)\*(-0.0088138 +/- 0.0022255) [-0.17]

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= 0.0961 +/- 0.0011		k_re= 0.1029 +/- 0.0010		k_re= 0.1233 +/- 0.0008	
k_im= -0.0032 +/- 0.0008		k_im= -0.0030 +/- 0.0008		k_im= -0.0025 +/- 0.0006	
corr= [-0.16]		corr= [-0.16]		corr= [-0.16]	
-----		-----		-----	
g = 0.0000 +/- nan		g = 0.0555 +/- 0.0066		g = 0.0171 +/- 0.0064	
arg(g)/pi= 0.0000 +/- nan		arg(g)/pi= -0.0795 +/- 0.0313		arg(g)/pi= 0.3059 +/- 0.1522	
-----		-----		-----	
g_re= 0.0000 +/- 0.0000		g_re= 0.0537 +/- 0.0059		g_re= 0.0098 +/- 0.0039	
g_im= 0.0000 +/- 0.0000		g_im= -0.0137 +/- 0.0062		g_im= 0.0140 +/- 0.0096	
corr= [ 0.00]		corr= [-0.49]		corr= [-0.75]	

\*\*\*\*\*

# k\_2poles\_xxxxxc\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 28.87 / (34 - 7) = 1.07$

JP2+_g_kaon:kaon/1^D_2_pole0	-1.0955 +/- 0.16096	1.00	0.11	-0.24	0.02	0.02	0.10	0.34
JP2+_g_kaon:kaon/1^D_2_pole1	1.4951 +/- 0.25028	1.00	0.56	-0.83	0.15	0.48	0.54	
JP2+_g_pi:pi/1^D_2_pole0	1.8529 +/- 0.087575		1.00	-0.66	0.09	0.47	0.05	
JP2+_g_pi:pi/1^D_2_pole1	-0.11366 +/- 0.28875			1.00	-0.18	-0.57	-0.21	
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	40.565 +/- 24.362				1.00	-0.11	-0.08	
JP2+_m_pole0	0.26416 +/- 0.0016932					1.00	0.36	
JP2+_m_pole1	0.28405 +/- 0.0014789						1.00	
JP2+_g_eta:eta/1^D_2_pole0	0.0000 +/- 0							FIXED
JP2+_g_eta:eta/1^D_2_pole1	0.0000 +/- 0							FIXED
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0							FIXED
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0							FIXED
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	0.0000 +/- 0							FIXED
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0							FIXED
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0							FIXED

## pole singularities

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JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$\text{sqrt}(s)_{\text{pole}} = (0.26146 \pm 0.001383) + (i/2)(-0.023804 \pm 0.0024011) [-0.44]$

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= -0.0800 +/- 0.0012	k_im= 0.0097 +/- 0.0009	k_re= -0.0879 +/- 0.0010	k_im= 0.0088 +/- 0.0009	k_re= 0.1111 +/- 0.0008	k_im= -0.0070 +/- 0.0007
corr= [-0.42]		corr= [-0.42]		corr= [-0.43]	
g = 0.0000 +/- nan	arg(g)/pi= 0.0000 +/- nan	g = 0.0315 +/- 0.0051	arg(g)/pi= -0.1117 +/- 0.0180	g = 0.0889 +/- 0.0042	arg(g)/pi= 0.9206 +/- 0.0066
g_re= 0.0000 +/- 0.0000	g_im= 0.0000 +/- 0.0000	g_re= 0.0296 +/- 0.0051	g_im= -0.0108 +/- 0.0018	g_re= -0.0862 +/- 0.0037	g_im= 0.0220 +/- 0.0027
corr= [ 0.00]		corr= [-0.46]		corr= [-0.92]	

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\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28309 \pm 0.0012858) + (i/2)*(-0.010433 \pm 0.0026159) [-0.58]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re=	-0.0964 +/- 0.0010		k_re=	0.1031 +/- 0.0009		k_re=	-0.1236 +/- 0.0007	
k_im=	0.0038 +/- 0.0009		k_im=	-0.0036 +/- 0.0009		k_im=	0.0030 +/- 0.0007	
corr=	[-0.58]		corr=	[-0.58]		corr=	[-0.58]	
g =	0.0000 +/- nan		g =	0.0656 +/- 0.0085		g =	0.0160 +/- 0.0058	
arg(g)/pi=	0.0000 +/- nan		arg(g)/pi=	-0.0615 +/- 0.0117		arg(g)/pi=	0.7998 +/- 0.2090	
g_re=	0.0000 +/- 0.0000		g_re=	0.0644 +/- 0.0082		g_re=	-0.0129 +/- 0.0105	
g_im=	0.0000 +/- 0.0000		g_im=	-0.0126 +/- 0.0031		g_im=	0.0094 +/- 0.0057	
corr=	[ 0.00]		corr=	[-0.61]		corr=	[ 0.89]	

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.25964 \pm 0.001381) + (i/2)*(-0.028238 \pm 0.0033231) [-0.23]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re=	-0.0787 +/- 0.0012		k_re=	0.0867 +/- 0.0010		k_re=	0.1100 +/- 0.0008	
k_im=	0.0116 +/- 0.0013		k_im=	-0.0106 +/- 0.0012		k_im=	-0.0083 +/- 0.0010	
corr=	[-0.26]		corr=	[-0.25]		corr=	[-0.24]	
g =	0.0000 +/- nan		g =	0.0351 +/- 0.0059		g =	0.0854 +/- 0.0046	
arg(g)/pi=	0.0000 +/- nan		arg(g)/pi=	-0.1086 +/- 0.0142		arg(g)/pi=	0.8981 +/- 0.0118	
g_re=	0.0000 +/- 0.0000		g_re=	0.0330 +/- 0.0054		g_re=	-0.0810 +/- 0.0034	
g_im=	0.0000 +/- 0.0000		g_im=	-0.0117 +/- 0.0027		g_im=	0.0269 +/- 0.0043	
corr=	[ 0.00]		corr=	[-0.78]		corr=	[-0.92]	

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.28287 \pm 0.0014221) + (i/2)*(-0.0088936 \pm 0.0022128) [-0.22]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re=	-0.0963 +/- 0.0010		k_re=	0.1030 +/- 0.0010		k_re=	0.1234 +/- 0.0008	
k_im=	0.0033 +/- 0.0008		k_im=	-0.0031 +/- 0.0008		k_im=	-0.0025 +/- 0.0006	
corr=	[-0.21]		corr=	[-0.21]		corr=	[-0.21]	
g =	0.0000 +/- nan		g =	0.0561 +/- 0.0068		g =	0.0161 +/- 0.0055	
arg(g)/pi=	0.0000 +/- nan		arg(g)/pi=	-0.0740 +/- 0.0297		arg(g)/pi=	0.2831 +/- 0.1708	
g_re=	0.0000 +/- 0.0000		g_re=	0.0546 +/- 0.0061		g_re=	0.0101 +/- 0.0041	
g_im=	0.0000 +/- 0.0000		g_im=	-0.0129 +/- 0.0060		g_im=	0.0125 +/- 0.0094	
corr=	[ 0.00]		corr=	[-0.53]		corr=	[-0.79]	

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$$\text{sqrt}(s)_{\text{pole}} = (0.26146 \pm 0.001383) + (i/2)*(-0.023804 \pm 0.0024011) [-0.44]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re=	0.0800 +/- 0.0012		k_re=	-0.0879 +/- 0.0010		k_re=	0.1111 +/- 0.0008	
k_im=	-0.0097 +/- 0.0009		k_im=	0.0088 +/- 0.0009		k_im=	-0.0070 +/- 0.0007	
corr=	[-0.42]		corr=	[-0.42]		corr=	[-0.43]	
g =	0.0000 +/- nan		g =	0.0315 +/- 0.0051		g =	0.0889 +/- 0.0042	
arg(g)/pi=	0.0000 +/- nan		arg(g)/pi=	-0.1117 +/- 0.0180		arg(g)/pi=	0.9206 +/- 0.0066	
g_re=	0.0000 +/- 0.0000		g_re=	0.0296 +/- 0.0051		g_re=	-0.0862 +/- 0.0037	
g_im=	0.0000 +/- 0.0000		g_im=	-0.0108 +/- 0.0018		g_im=	0.0220 +/- 0.0027	
corr=	[ 0.00]		corr=	[-0.46]		corr=	[-0.92]	

\*\*\*\*\*  
 JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[+]

$$\text{sqrt}(s)_{\text{pole}} = (0.28309 \pm 0.0012858) + (i/2)*(-0.010433 \pm 0.0026159) [-0.58]$$

eta:eta/1^D_2			kaon:kaon/1^D_2			pi:pi/1^D_2		
k_re=	0.0964 +/- 0.0010		k_re=	0.1031 +/- 0.0009		k_re=	-0.1236 +/- 0.0007	
k_im=	-0.0038 +/- 0.0009		k_im=	-0.0036 +/- 0.0009		k_im=	0.0030 +/- 0.0007	
corr=	[-0.58]		corr=	[-0.58]		corr=	[-0.58]	
g =	0.0000 +/- nan		g =	0.0656 +/- 0.0085		g =	0.0160 +/- 0.0058	
arg(g)/pi=	0.0000 +/- nan		arg(g)/pi=	-0.0615 +/- 0.0117		arg(g)/pi=	0.7998 +/- 0.2090	
g_re=	0.0000 +/- 0.0000		g_re=	0.0644 +/- 0.0082		g_re=	-0.0129 +/- 0.0105	
g_im=	0.0000 +/- 0.0000		g_im=	-0.0126 +/- 0.0031		g_im=	0.0094 +/- 0.0057	

corr= [ 0.00] | corr= [-0.61] | corr= [ 0.89] |

\*\*\*\*\*

\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.25964 +/- 0.001381)  
+ (i/2)\*(-0.028238 +/- 0.0033231) [-0.23]

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= 0.0787 +/- 0.0012		k_re= 0.0867 +/- 0.0010		k_re= 0.1100 +/- 0.0008	
k_im= -0.0116 +/- 0.0013		k_im= -0.0106 +/- 0.0012		k_im= -0.0083 +/- 0.0010	
corr= [-0.26]		corr= [-0.25]		corr= [-0.24]	
-----					
g = 0.0000 +/- nan		g = 0.0351 +/- 0.0059		g = 0.0854 +/- 0.0046	
arg(g)/pi= 0.0000 +/- nan		arg(g)/pi= -0.1086 +/- 0.0142		arg(g)/pi= 0.8981 +/- 0.0118	
-----					
g_re= 0.0000 +/- 0.0000		g_re= 0.0330 +/- 0.0054		g_re= -0.0810 +/- 0.0034	
g_im= 0.0000 +/- 0.0000		g_im= -0.0117 +/- 0.0027		g_im= 0.0269 +/- 0.0043	
corr= [ 0.00]		corr= [-0.78]		corr= [-0.92]	

\*\*\*\*\*

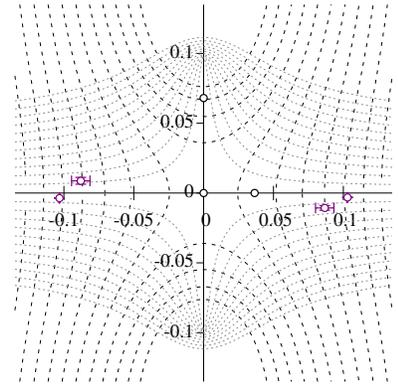
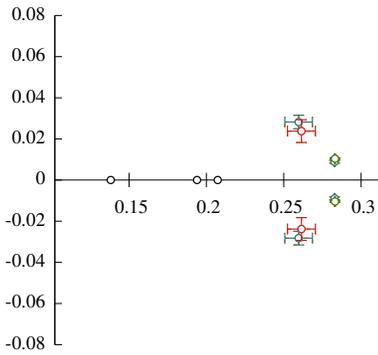
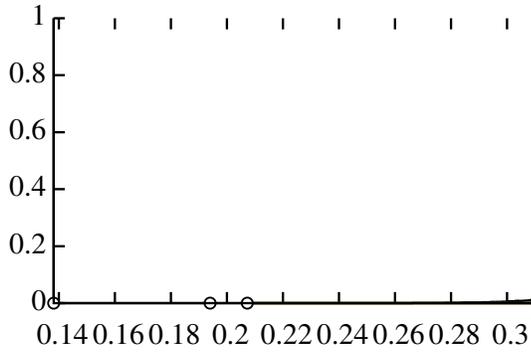
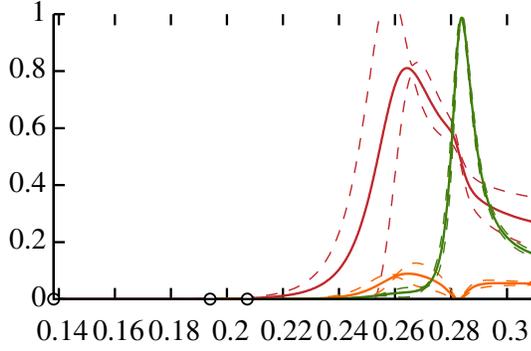
\*\*\*\*\*  
JP=2+ || eta:eta/1^D\_2[-] kaon:kaon/1^D\_2[-] pi:pi/1^D\_2[-]

sqrt(s)\_pole = (0.28287 +/- 0.0014221)  
+ (i/2)\*(-0.0088936 +/- 0.0022128) [-0.22]

eta:eta/1^D_2		kaon:kaon/1^D_2		pi:pi/1^D_2	
k_re= 0.0963 +/- 0.0010		k_re= 0.1030 +/- 0.0010		k_re= 0.1234 +/- 0.0008	
k_im= -0.0033 +/- 0.0008		k_im= -0.0031 +/- 0.0008		k_im= -0.0025 +/- 0.0006	
corr= [-0.21]		corr= [-0.21]		corr= [-0.21]	
-----					
g = 0.0000 +/- nan		g = 0.0561 +/- 0.0068		g = 0.0161 +/- 0.0055	
arg(g)/pi= 0.0000 +/- nan		arg(g)/pi= -0.0740 +/- 0.0297		arg(g)/pi= 0.2831 +/- 0.1708	
-----					
g_re= 0.0000 +/- 0.0000		g_re= 0.0546 +/- 0.0061		g_re= 0.0101 +/- 0.0041	
g_im= 0.0000 +/- 0.0000		g_im= -0.0129 +/- 0.0060		g_im= 0.0125 +/- 0.0094	
corr= [ 0.00]		corr= [-0.53]		corr= [-0.79]	

\*\*\*\*\*

# k\_2poles\_xxxxxs\_noCM



## parameter values

minimised with  $\text{chisq}/\text{nDoF} = 28.60 / (34 - 7) = 1.06$

JP2+_g_kaon:kaon/1^D_2_pole0	-1.0935 +/- 0.040448	1.00	-0.26	-0.48	-0.17	-0.14	0.48	0.30
JP2+_g_kaon:kaon/1^D_2_pole1	1.4955 +/- 0.028877	1.00	0.54	0.15	0.16	-0.54	-0.29	
JP2+_g_pi:pi/1^D_2_pole0	1.8527 +/- 0.32039		1.00	0.34	0.29	-1.00	-0.59	
JP2+_g_pi:pi/1^D_2_pole1	-0.11513 +/- 0.031789			1.00	0.09	-0.34	-0.18	
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order1	519.59 +/- 74.526				1.00	-0.29	-0.18	
JP2+_m_pole0	0.26414 +/- 0.007068					1.00	0.59	
JP2+_m_pole1	0.28404 +/- 0.00028966						1.00	
JP2+_g_eta:eta/1^D_2_pole0	0.0000 +/- 0							FIXED
JP2+_g_eta:eta/1^D_2_pole1	0.0000 +/- 0							FIXED
JP2+_gamma_eta:eta/1^D_2 eta:eta/1^D_2_order0	0.0000 +/- 0							FIXED
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0							FIXED
JP2+_gamma_eta:eta/1^D_2 kaon:kaon/1^D_2_orde	0.0000 +/- 0							FIXED
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0							FIXED
JP2+_gamma_eta:eta/1^D_2 pi:pi/1^D_2_order1	0.0000 +/- 0							FIXED
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	0.0000 +/- 0							FIXED
JP2+_gamma_kaon:kaon/1^D_2 kaon:kaon/1^D_2_or	0.0000 +/- 0							FIXED
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0							FIXED
JP2+_gamma_kaon:kaon/1^D_2 pi:pi/1^D_2_order1	0.0000 +/- 0							FIXED
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order0	0.0000 +/- 0							FIXED
JP2+_gamma_pi:pi/1^D_2 pi:pi/1^D_2_order1	0.0000 +/- 0							FIXED

## pole singularities

\*\*\*\*\*

JP=2+ || eta:eta/1^D\_2[+] kaon:kaon/1^D\_2[+] pi:pi/1^D\_2[-]

$\text{sqrt}(s)_{\text{pole}} = (0.26144 \pm 0.0090323) + (i/2) * (-0.023794 \pm 0.0055301) [1.00]$

eta:eta/1^D_2	kaon:kaon/1^D_2	pi:pi/1^D_2
k_re= -0.0800 +/- 0.0071	k_re= -0.0879 +/- 0.0066	k_re= 0.1110 +/- 0.0053
k_im= 0.0097 +/- 0.0028	k_im= 0.0088 +/- 0.0024	k_im= -0.0070 +/- 0.0017
corr= [ 1.00]	corr= [ 1.00]	corr= [ 1.00]
g = 0.0000 +/- 0.0000	g = 0.0314 +/- 0.0036	g = 0.0889 +/- 0.0065
arg(g)/pi= -0.0920 +/- 0.0799	arg(g)/pi= -0.1116 +/- 0.0244	arg(g)/pi= -0.0794 +/- 0.0223

```

-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0295 +/- 0.0042 | g_re= 0.0861 +/- 0.0048 |
g_im=-0.0000 +/- 0.0000 | g_im=-0.0108 +/- 0.0011 | g_im=-0.0219 +/- 0.0076 |
corr= [ 0.13] | corr= [ 0.87] | corr= [-1.00] |
*****

*****
JP=2+ || eta:eta/1^D_2[+] kaon:kaon/1^D_2[-] pi:pi/1^D_2[+]
sqrt(s)_pole = (0.28308 +/- 0.00029539)
+ (i/2)*(-0.010429 +/- 0.00036421) [ 0.27]

eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= -0.0964 +/- 0.0002 | k_re= 0.1031 +/- 0.0002 | k_re= -0.1236 +/- 0.0002 |
k_im= 0.0038 +/- 0.0001 | k_im= -0.0036 +/- 0.0001 | k_im= 0.0030 +/- 0.0001 |
corr= [ 0.29] | corr= [ 0.29] | corr= [ 0.28] |
-----|-----|-----|
|g|= 0.0000 +/- 0.0000 | |g|= 0.0656 +/- 0.0011 | |g|= 0.0159 +/- 0.0023 |
arg(g)/pi= -0.0373 +/- 0.0809 | arg(g)/pi= -0.0613 +/- 0.0042 | arg(g)/pi= -0.1989 +/- 0.0235 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0644 +/- 0.0010 | g_re= 0.0129 +/- 0.0021 |
g_im= -0.0000 +/- 0.0000 | g_im= -0.0126 +/- 0.0010 | g_im= -0.0093 +/- 0.0015 |
corr= [-0.03] | corr= [-0.78] | corr= [-0.54] |
*****

*****
JP=2+ || eta:eta/1^D_2[+] kaon:kaon/1^D_2[-] pi:pi/1^D_2[-]
sqrt(s)_pole = (0.25963 +/- 0.0089313)
+ (i/2)*(-0.028218 +/- 0.0033161) [ 1.00]

eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= -0.0787 +/- 0.0071 | k_re= 0.0867 +/- 0.0066 | k_re= 0.1100 +/- 0.0052 |
k_im= 0.0116 +/- 0.0020 | k_im= -0.0106 +/- 0.0017 | k_im= -0.0083 +/- 0.0011 |
corr= [ 1.00] | corr= [ 1.00] | corr= [ 1.00] |
-----|-----|-----|
|g|= 0.0000 +/- 0.0000 | |g|= 0.0350 +/- 0.0072 | |g|= 0.0854 +/- 0.0057 |
arg(g)/pi= -0.1104 +/- 0.0899 | arg(g)/pi= -0.1084 +/- 0.0359 | arg(g)/pi= -0.1018 +/- 0.0142 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0330 +/- 0.0081 | g_re= 0.0810 +/- 0.0042 |
g_im= -0.0000 +/- 0.0000 | g_im= -0.0117 +/- 0.0014 | g_im= -0.0268 +/- 0.0054 |
corr= [ 0.03] | corr= [ 0.90] | corr= [-1.00] |
*****

*****
JP=2+ || eta:eta/1^D_2[+] kaon:kaon/1^D_2[-] pi:pi/1^D_2[-]
sqrt(s)_pole = (0.28286 +/- 0.00025502)
+ (i/2)*(-0.0088937 +/- 0.00068262) [ 0.21]

eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= -0.0963 +/- 0.0002 | k_re= 0.1030 +/- 0.0002 | k_re= 0.1234 +/- 0.0001 |
k_im= 0.0033 +/- 0.0003 | k_im= -0.0031 +/- 0.0002 | k_im= -0.0025 +/- 0.0002 |
corr= [ 0.19] | corr= [ 0.20] | corr= [ 0.20] |
-----|-----|-----|
|g|= 0.0000 +/- 0.0000 | |g|= 0.0561 +/- 0.0028 | |g|= 0.0161 +/- 0.0029 |
arg(g)/pi= -0.0330 +/- 0.0790 | arg(g)/pi= -0.0740 +/- 0.0125 | arg(g)/pi= 0.2847 +/- 0.0235 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0546 +/- 0.0032 | g_re= 0.0101 +/- 0.0021 |
g_im= -0.0000 +/- 0.0000 | g_im= -0.0129 +/- 0.0016 | g_im= 0.0125 +/- 0.0023 |
corr= [-0.05] | corr= [ 0.88] | corr= [ 0.70] |
*****

*****
JP=2+ || eta:eta/1^D_2[-] kaon:kaon/1^D_2[+] pi:pi/1^D_2[-]
sqrt(s)_pole = (0.26144 +/- 0.0090323)
+ (i/2)*(-0.023794 +/- 0.0055301) [ 1.00]

eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= 0.0800 +/- 0.0071 | k_re= -0.0879 +/- 0.0066 | k_re= 0.1110 +/- 0.0053 |
k_im= -0.0097 +/- 0.0028 | k_im= 0.0088 +/- 0.0024 | k_im= -0.0070 +/- 0.0017 |
corr= [ 1.00] | corr= [ 1.00] | corr= [ 1.00] |
-----|-----|-----|
|g|= 0.0000 +/- 0.0000 | |g|= 0.0314 +/- 0.0036 | |g|= 0.0889 +/- 0.0065 |
arg(g)/pi= -0.0876 +/- 0.0865 | arg(g)/pi= -0.1116 +/- 0.0244 | arg(g)/pi= -0.0794 +/- 0.0223 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0295 +/- 0.0042 | g_re= 0.0861 +/- 0.0048 |
g_im= -0.0000 +/- 0.0000 | g_im= -0.0108 +/- 0.0011 | g_im= -0.0219 +/- 0.0076 |
corr= [ 0.13] | corr= [ 0.87] | corr= [-1.00] |
*****

*****
JP=2+ || eta:eta/1^D_2[-] kaon:kaon/1^D_2[-] pi:pi/1^D_2[+]
sqrt(s)_pole = (0.28308 +/- 0.00029539)
+ (i/2)*(-0.010429 +/- 0.00036421) [ 0.27]

eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= 0.0964 +/- 0.0002 | k_re= 0.1031 +/- 0.0002 | k_re= -0.1236 +/- 0.0002 |
k_im= -0.0038 +/- 0.0001 | k_im= -0.0036 +/- 0.0001 | k_im= 0.0030 +/- 0.0001 |
corr= [ 0.29] | corr= [ 0.29] | corr= [ 0.28] |

```

```

=====|=====|=====|
|g|= 0.0000 +/- 0.0000 | |g|= 0.0656 +/- 0.0011 | |g|= 0.0159 +/- 0.0023 |
arg(g)/pi= -0.0243 +/- 0.0814 | arg(g)/pi= -0.0613 +/- 0.0042 | arg(g)/pi= -0.1989 +/- 0.0235 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0644 +/- 0.0010 | g_re= 0.0129 +/- 0.0021 |
g_im= -0.0000 +/- 0.0000 | g_im= -0.0126 +/- 0.0010 | g_im= -0.0093 +/- 0.0015 |
corr= [ 0.03] | corr= [-0.78] | corr= [-0.54] |
*****

```

```

*****
JP=2+ || eta:eta/1^D_2[-] kaon:kaon/1^D_2[-] pi:pi/1^D_2[-]

```

```

sqrt(s)_pole = (0.25963 +/- 0.0089313)
               + (i/2)*(-0.028218 +/- 0.0033161) [ 1.00]

```

```

=====|=====|=====|
eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= 0.0787 +/- 0.0071 | k_re= 0.0867 +/- 0.0066 | k_re= 0.1100 +/- 0.0052 |
k_im= -0.0116 +/- 0.0020 | k_im= -0.0106 +/- 0.0017 | k_im= -0.0083 +/- 0.0011 |
corr= [ 1.00] | corr= [ 1.00] | corr= [ 1.00] |
-----|-----|-----|
|g|= 0.0000 +/- 0.0000 | |g|= 0.0350 +/- 0.0072 | |g|= 0.0854 +/- 0.0057 |
arg(g)/pi= -0.1068 +/- 0.0861 | arg(g)/pi= -0.1084 +/- 0.0359 | arg(g)/pi= -0.1018 +/- 0.0142 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0330 +/- 0.0081 | g_re= 0.0810 +/- 0.0042 |
g_im= -0.0000 +/- 0.0000 | g_im= -0.0117 +/- 0.0014 | g_im= -0.0268 +/- 0.0054 |
corr= [ 0.17] | corr= [ 0.90] | corr= [-1.00] |
*****

```

```

*****
JP=2+ || eta:eta/1^D_2[-] kaon:kaon/1^D_2[-] pi:pi/1^D_2[-]

```

```

sqrt(s)_pole = (0.28286 +/- 0.00025502)
               + (i/2)*(-0.0088937 +/- 0.00068262) [ 0.21]

```

```

=====|=====|=====|
eta:eta/1^D_2 | kaon:kaon/1^D_2 | pi:pi/1^D_2 |
-----|-----|-----|
k_re= 0.0963 +/- 0.0002 | k_re= 0.1030 +/- 0.0002 | k_re= 0.1234 +/- 0.0001 |
k_im= -0.0033 +/- 0.0003 | k_im= -0.0031 +/- 0.0002 | k_im= -0.0025 +/- 0.0002 |
corr= [ 0.19] | corr= [ 0.20] | corr= [ 0.20] |
-----|-----|-----|
|g|= 0.0000 +/- 0.0000 | |g|= 0.0561 +/- 0.0028 | |g|= 0.0161 +/- 0.0029 |
arg(g)/pi= -0.0198 +/- 0.0793 | arg(g)/pi= -0.0740 +/- 0.0125 | arg(g)/pi= 0.2847 +/- 0.0235 |
-----|-----|-----|
g_re= 0.0000 +/- 0.0000 | g_re= 0.0546 +/- 0.0032 | g_re= 0.0101 +/- 0.0021 |
g_im= -0.0000 +/- 0.0000 | g_im= -0.0129 +/- 0.0016 | g_im= 0.0125 +/- 0.0023 |
corr= [-0.04] | corr= [ 0.88] | corr= [ 0.70] |
*****

```