$\phi(2170)$

$I^G(J^{PC}) = 0^-(1^{--})$

See the review on "Spectroscopy of Light Meson Resonances."

$\phi(2170)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
2164 ± 5 OUR AVERAGE					
2164.7± 9.1± 3.1		[1] ABLIKIM	24AN	BES3	$e^+e^- \to K^0_S K^0_L \pi^0$
2178 ±20 ± 5		[2] ABLIKIM	23AX	BES3	$e^+e^- \to \phi\pi^+\pi^-$
2190 ±19 ±37		[3] ABLIKIM	22L	BES3	2.0–3.08 $e^+e^- \to K^+K^-\pi^0$
2163.5± 6.2± 3.0		[4] ABLIKIM	21T	BES3	$e^+e^- \to \phi\eta$
2177.5± 4.8±19.5		[5] ABLIKIM	20M	BES3	$e^+e^- \to \eta'\phi$
2126.5±16.8±12.4		[6] ABLIKIM	20S	BES3	$e^+e^- \to K^+K^-\pi^0\pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2191.6± 5.0		[7] CHEN	25D	RVUE	$e^+e^- \to K^+K^-,\ K^0_S K^0_L$
2215.7± 8.3		[8] LICHARD	23	RVUE	$e^+e^- \to \Upsilon(nS) \to \phi\eta\gamma$
2169 ± 5 ± 6		[9] ZHU	23A	RVUE	$e^+e^- \to \eta\phi$
2273.7± 5.7±19.3		[10] ABLIKIM	21AP	BES3	$e^+e^- \to K^0_S K^0_L$
2135 ± 8 ± 9	95	ABLIKIM	19I	BES3	$e^+e^- \to \eta\phi f_0(980)$
2239.2± 7.1±11.3		[11] ABLIKIM	19L	BES3	$e^+e^- \to K^+K^-$
2200 ± 6 ± 5	471	ABLIKIM	15H	BES3	$J/\psi \to \eta\phi\pi^+\pi^-$
2180 ± 8 ± 8		[12,13] LEES	12F	BABR	10.6 $e^+e^- \to \phi\pi^+\pi^-\gamma$
2079 ±13 $^{+79}_{-28}$	4.8k	[14] SHEN	09	BELL	10.6 $e^+e^- \to K^+K^-\pi^+\pi^-\gamma$
2186 ±10 ± 6	52	ABLIKIM	08F	BES	$J/\psi \to \eta\phi f_0(980)$
2125 ±22 ±10	483	AUBERT	08S	BABR	10.6 $e^+e^- \to \phi\eta\gamma$
2192 ±14	116	[15] AUBERT	07AK	BABR	10.6 $e^+e^- \to K^+K^-\pi^+\pi^-\gamma$
2169 ±20	149	[15] AUBERT	07AK	BABR	10.6 $e^+e^- \to K^+K^-\pi^0\pi^0\gamma$
2175 ±10 ±15	201	[13,16] AUBERT,BE	06D	BABR	10.6 $e^+e^- \to K^+K^-\pi\pi\gamma$

[1] Seen in $e^+e^- \to K^*(892)^0\overline{K}^0 \to K^0_S K^0_L \pi^0$ with a significance of 3.2σ.

[2] From a fit to the e^+e^- cross section between 2.00 and 3.08 GeV with a sum of Breit-Wigner amplitude and a non-resonant contribution.

[3] By a simultaneous fit of the $K^*_2(1430)^+K^-$ and $K^*(892)^+K^-$ intermediate channels in a partial-wave analysis, assuming the same structure, modelled with a coherent sum of a nonresonant component and a resonant component by a Breit-Wigner function.

[4] From a fit to the cross section below 3.5 GeV measured by BaBar and BESIII with a coherent sum of two modified Breit-Wigner amplitudes ($\phi(1680)$ and $\phi(2170)$) and a nonresonant term.

[5] From a fit using a coherent sum of a phase-space modified Breit-Wigner function and a phase-space term.

[6] By a simultaneous fit of the intermediate channels in a partial-wave analysis, assuming the same structure, modelled with a coherent sum of a nonresonant component and a resonant component by a Breit-Wigner function.

[7] From the combined analysis of the cross sections for $e^+ e^- \to K^+ K$ and $e^+ e^- \to K^0_S K^0_L$ using data from ABLIKIM 19L and ABLIKIM 21AP. The parametrisation includes the interference between direct coupling process and resonance intermediate process with the isospin factor fixed to one. Other solutions which include additional vector resonances give 2190.0 ± 20.1 MeV and 2186.1 ± 6.2 MeV.

[8] From a VDM fit to ZHU 23 $\eta\phi\gamma$ data with two resonances, $\phi(1680)$, $\phi(2170)$, and a third resonance with mass 1850.7 ± 5.3 MeV and width 25 ± 35 MeV of 1.7 σ statistical evidence.

[9] From the analysis of the combined measurements of $\sigma(e^+ e^- \to \eta\phi)$ from BaBar, Belle, BESIII, CMD3. The statistical significance for $\phi(2170)$ is 7.2 σ.

[10] From a fit to the cross section between 2.00 and 3.08 GeV with a sum of Breit-Wigner amplitude and a nonresonant contribution. The observed structure can be also due to $\rho(2150)$.

[11] The observed structure can be due to both the $\phi(2170)$ and $\rho(2150)$.

[12] Fit includes interference with the $\phi(1680)$.

[13] From the $\phi f_0(980)$ component.

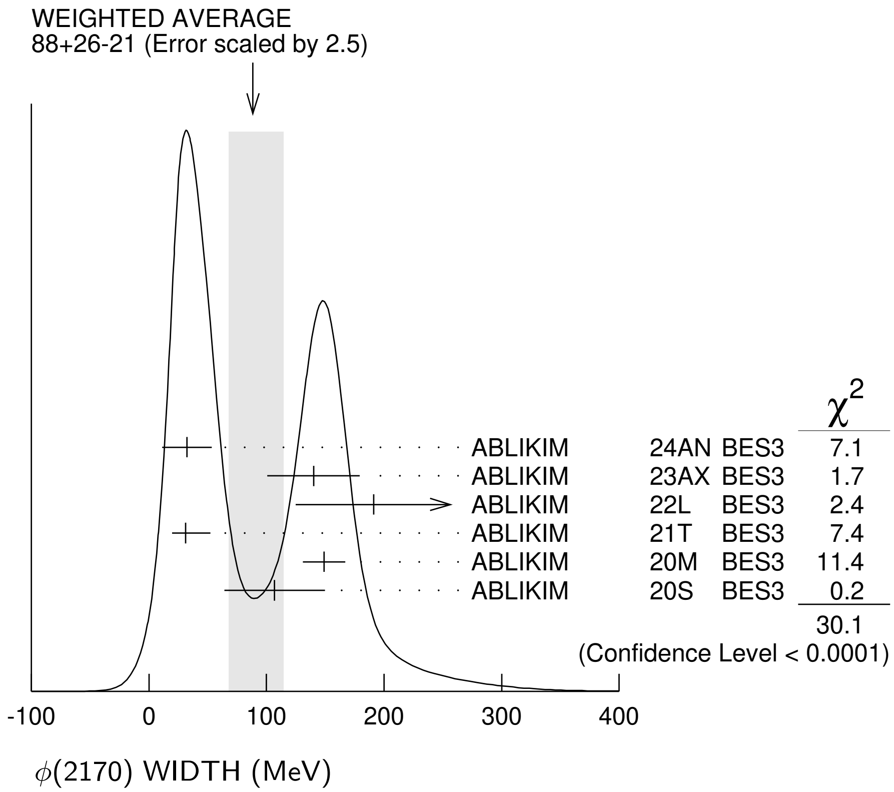
[14] From a fit with two incoherent Breit-Wigners.

[15] From the $K^+ K^- f_0(980)$ component.

[16] Superseded by LEES 12F.

ϕ(2170) WIDTH

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
88 $^{+26}_{-21}$ OUR AVERAGE		Error includes scale factor of 2.5. See the ideogram below.			
32.4±21.0± 1.8		[1] ABLIKIM	24AN	BES3	$e^+ e^- \to K^0_S K^0_L \pi^0$
140 ±36 ±16		[2] ABLIKIM	23AX	BES3	$e^+ e^- \to \phi\pi^+\pi^-$
191 ±28 ±60		[3] ABLIKIM	22L	BES3	2.0–3.08 $e^+ e^- \to K^+ K^- \pi^0$
$31.1^{+21.1}_{-11.6}$± 1.1		[4] ABLIKIM	21T	BES3	$e^+ e^- \to \phi\eta$
149.0±15.6± 8.9		[5] ABLIKIM	20M	BES3	$e^+ e^- \to \eta'\phi$
106.9±32.1±28.1		[6] ABLIKIM	20S	BES3	$e^+ e^- \to K^+ K^- \pi^0 \pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
86.1± 9.2		[7] CHEN	25D	RVUE	$e^+ e^- \to K^+ K^-$, $K^0_S K^0_L$
35 ±23		[8] LICHARD	23	RVUE	$e^+ e^- \to \Upsilon(\text{nS}) \to \phi\eta\gamma$
96 $^{+17}_{-14}$ ± 9		[9] ZHU	23A	RVUE	$e^+ e^- \to \eta\phi$
86 ±44 ±51		[10] ABLIKIM	21AP	BES3	$e^+ e^- \to K^0_S K^0_L$
104 ±24 ±12	95	ABLIKIM	19I	BES3	$e^+ e^- \to \eta\phi f_0(980)$
139.8±12.3±20.6		[11] ABLIKIM	19L	BES3	$e^+ e^- \to K^+ K^-$
104 ±15 ±15	471	ABLIKIM	15H	BES3	$J/\psi \to \eta\phi\pi^+\pi^-$
77 ±15 ±10		[12,13] LEES	12F	BABR	10.6 $e^+ e^- \to \phi\pi^+\pi^-\gamma$
192 ±23 $^{+25}_{-61}$	4.8k	[14] SHEN	09	BELL	10.6 $e^+ e^- \to K^+ K^- \pi^+ \pi^- \gamma$
65 ±23 ±17	52	ABLIKIM	08F	BES	$J/\psi \to \eta\phi f_0(980)$
61 ±50 ±13	483	AUBERT	08S	BABR	10.6 $e^+ e^- \to \phi\eta\gamma$
71 ±21	116	[15] AUBERT	07AK	BABR	10.6 $e^+ e^- \to K^+ K^- \pi^+ \pi^- \gamma$
102 ±27	149	[15] AUBERT	07AK	BABR	10.6 $e^+ e^- \to K^+ K^- \pi^0 \pi^0 \gamma$
58 ±16 ±20	201	[13,16] AUBERT,BE	06D	BABR	10.6 $e^+ e^- \to K^+ K^- \pi\pi\gamma$



[1] Seen in $e^+ e^- \to K^*(892)^0 \overline{K}^0 \to K^0_S K^0_L \pi^0$ with a significance of 3.2σ.

[2] From a fit to the $e^+ e^-$ cross section between 2.00 and 3.08 GeV with a sum of Breit-Wigner amplitude and a non-resonant contribution.

[3] By a simultaneous fit of the $K^*_2(1430)^+ K^-$ and $K^*(892)^+ K^-$ intermediate channels in a partial-wave analysis, assuming the same structure, modelled with a coherent sum of a nonresonant component and a resonant component by a Breit-Wigner function.

[4] From a fit to the cross section below 3.5 GeV measured by BaBar and BESIII with a coherent sum of two modified Breit-Wigner amplitudes ($\phi(1680)$ and $\phi(2170)$) and a nonresonant term.

[5] From a fit using a coherent sum of a phase-space modified Breit-Wigner function and a phase-space term.

[6] By a simultaneous fit of the intermediate channels in a partial-wave analysis, assuming the same structure, modelled with a coherent sum of a nonresonant component and a resonant component by a Breit-Wigner function.

[7] From the combined analysis of the cross sections for $e^+ e^- \to K^+ K$ and $e^+ e^- \to K^0_S K^0_L$ using data from ABLIKIM 19L and ABLIKIM 21AP. The parametrisation includes the interference between direct coupling process and resonance intermediate process with the isospin factor fixed to one. Other solutions which include additional vector resonances give 85.9 ± 8.6 MeV and 86.4 ± 8.9 MeV.

[8] From a VDM fit to ZHU 23 $\eta \phi \gamma$ data with two resonances, $\phi(1680)$, $\phi(2170)$, and a third resonance with mass 1850.7 ± 5.3 MeV and width 25 ± 35 MeV of 1.7 σ statistical evidence.

[9] From the analysis of the combined measurements of $\sigma(e^+ e^- \to \eta \phi)$ from BaBar, Belle, BESIII, CMD3. The statistical significance for $\phi(2170)$ is 7.2 σ.

[10] From a fit to the cross section between 2.00 and 3.08 GeV with a sum of Breit-Wigner amplitude and a nonresonant contribution. The observed structure can be also due to $\rho(2150)$.

[11] The observed structure can be due to both the $\phi(2170)$ and $\rho(2150)$.

[12] Fit includes interference with the $\phi(1680)$.

[13] From the $\phi f_0(980)$ component.
[14] From a fit with two incoherent Breit-Wigners.
[15] From the $K^+ K^- f_0(980)$ component.
[16] Superseded by LEES 12F.

ϕ(2170) DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$e^+ e^-$	seen
Γ_2	$\phi\eta$	seen
Γ_3	$\phi\eta'$	seen
Γ_4	$\phi\pi\pi$	seen
Γ_5	$\phi f_0(980)$	seen
Γ_6	$K^0_S K^0_L$	
Γ_7	$K^+ K^- \pi^+ \pi^-$	
Γ_8	$K^+ K^- f_0(980) \to K^+ K^- \pi^+ \pi^-$	seen
Γ_9	$K^+ K^- \pi^0 \pi^0$	
Γ_{10}	$K^+ K^- f_0(980) \to K^+ K^- \pi^0 \pi^0$	seen
Γ_{11}	$K^{*0} K^\pm \pi^\mp$	not seen
Γ_{12}	$K^*(892)^0 \overline{K}^*(892)^0$	not seen
Γ_{13}	$K^*(892)^+ K^*(892)^-$	
Γ_{14}	$K^*(892)^+ K^- +$ c.c.	
Γ_{15}	$K^*(892)^0 \overline{K}^0$	
Γ_{16}	$K(1460)^+ K^- +$ c.c.	
Γ_{17}	$K_1(1270)^+ K^- +$ c.c.	
Γ_{18}	$K_1(1400)^+ K^- +$ c.c.	
Γ_{19}	$K_2^*(1430)^+ K^- +$ c.c.	

ϕ(2170) Γ(i)Γ($e^+ e^-$)/Γ(total)

$\Gamma(\phi\eta) \times \Gamma(e^+ e^-)/\Gamma_{total}$ — $\Gamma_2\Gamma_1/\Gamma$

VALUE (eV)	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •						
0.17	90		[1] ZHU	23	BELL	$e^+ e^- \to \Upsilon(\text{nS}) \to \phi\eta\gamma$
$0.36^{+0.05}_{-0.03} \pm 0.07$ to $41 \pm 2 \pm 6$			[2] ZHU	23A	RVUE	$e^+ e^- \to \eta\phi$
$0.24^{+0.12}_{-0.07}$			[3] ABLIKIM	21T	BES3	$e^+ e^- \to \phi\eta$
$1.7 \pm 0.7 \pm 1.3$		483	AUBERT	08S	BABR	$10.6\ e^+ e^- \to \phi\eta\gamma$

[1] From a solution of the fit using a vector meson dominance model with contributions from ϕ(1680), ϕ(2170) and non resonant contribution with mass and width of ϕ(2170) fixed at 2163.5 MeV and 31.1 MeV respectively. Four solutions are found with equal fit quality giving 0.17 eV (solution I and II) and 18.6 eV (III and IV) at 90% CL.

[2] From the analysis of the combined measurements of $\sigma(e^+ e^- \to \eta\phi)$ from BaBar, Belle, BESIII, CMD3. The statistical significance for ϕ(2170) is 7.2 σ. Four solutions are found,

with equal fit quality: $(0.56^{+0.03}_{-0.02} \pm 0.07)$ eV, $(0.36^{+0.05}_{-0.03} \pm 0.07)$ eV, $(38 \pm 1 \pm 5)$ eV, $(41 \pm 2 \pm 6)$ eV.

[3] From a solution of the fit to the cross section below 3.5 GeV measured by BaBar and BESIII with a coherent sum of two modified Breit-Wigner amplitudes ($\phi(1680)$ and $\phi(2170)$) and a nonresonant term. The other solution gives $10.11^{+3.87}_{-3.13}$ eV.

$\Gamma(\phi\eta') \times \Gamma(e^+e^-)/\Gamma_{total}$ — $\Gamma_3\Gamma_1/\Gamma$

VALUE (eV)	DOCUMENT ID		TECN	COMMENT
7.1±0.7±0.7	[1] ABLIKIM	20M	BES3	$e^+e^- \to \eta'\phi$

[1] From a fit using a coherent sum of a phase-space modified Breit-Wigner function and a phase-space term.

$\Gamma(\phi f_0(980)) \times \Gamma(e^+e^-)/\Gamma_{total}$ — $\Gamma_5\Gamma_1/\Gamma$

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.3±0.3±0.3		[1,2] LEES	12F	BABR	10.6 $e^+e^- \to \phi\pi^+\pi^-\gamma$
2.5±0.8±0.4	201	[2,3] AUBERT,BE	06D	BABR	10.6 $e^+e^- \to K^+K^-\pi\pi\gamma$

[1] From a fit with constructive interference with the $\phi(1680)$. In a fit with destructive interference, the value is larger by a factor of 12.

[2] For $f_0(980) \to \pi\pi$.

[3] Superseded by LEES 12F.

$\Gamma(K^0_S K^0_L) \times \Gamma(e^+e^-)/\Gamma_{total}$ — $\Gamma_6\Gamma_1/\Gamma$

VALUE (eV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.9±0.6±0.7	[1] ABLIKIM	21AP	BES3	$e^+e^- \to K^0_S K^0_L$

[1] From a fit to the cross section between 2.00 and 3.08 GeV with a sum of Breit-Wigner amplitude and a nonresonant contribution. The observed structure can be also due to $\rho(2150)$.

$\Gamma(K^*(892)^+ K^*(892)^-) \times \Gamma(e^+e^-)/\Gamma_{total}$ — $\Gamma_{13}\Gamma_1/\Gamma$

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<1.9	90	[1] ABLIKIM	20S	BES3	$e^+e^- \to K^+K^-\pi^0\pi^0$

[1] By a simultaneous fit of the intermediate channels in a partial-wave analysis, assuming the same structure, modelled with a coherent sum of a nonresonant component and a resonant component by a Breit-Wigner function.

$\Gamma(K^*(892)^+ K^- + c.c.) \times \Gamma(e^+e^-)/\Gamma_{total}$ — $\Gamma_{14}\Gamma_1/\Gamma$

VALUE (eV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.0±0.3	[1] ABLIKIM	22L	BES3	2.0–3.08 $e^+e^- \to K^+K^-\pi^0$

[1] From a solution of a simultaneous fit of the $K^*_2(1430)^+ K^-$ and $K^*(892)^+ K^-$ intermediate channels in a partial-wave analysis, assuming the same structure, modelled with a coherent sum of a nonresonant component and a resonant component by a Breit-Wigner function. The other solution gives 7.1 ± 0.9 eV. Significance 3.7 σ.

$\Gamma(K^*(892)^0 \overline{K}^0) \times \Gamma(e^+e^-)/\Gamma_{total}$ — $\Gamma_{15}\Gamma_1/\Gamma$

VALUE (eV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.0±0.2±0.1	[1] ABLIKIM	24AN	BES3	$e^+e^- \to K^0_S K^0_L \pi^0$

73.6±4.4±2.0	[2] ABLIKIM	24AN	BES3	$e^+e^- \to K^0_S K^0_L \pi^0$

[1] Solution 1 of 2. Seen in $e^+e^- \to K^*(892)^0 \overline{K}^0 \to K^0_S K^0_L \pi^0$ with a significance of 3.2σ.

[2] Solution 2 of 2. Seen in $e^+e^- \to K^*(892)^0 \overline{K}^0 \to K^0_S K^0_L \pi^0$ with a significance of 3.2σ.

$\Gamma(K(1460)^+ K^- + \text{c.c.}) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ — $\Gamma_{16}\Gamma_1/\Gamma$

VALUE (eV)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3.0±3.8	[1] ABLIKIM	20S	BES3	$e^+e^- \to K^+K^-\pi^0\pi^0$

[1] By a simultaneous fit of the intermediate channels in a partial-wave analysis, assuming the same structure, modelled with a coherent sum of a nonresonant component and a resonant component by a Breit-Wigner function.

$\Gamma(K_1(1270)^+ K^- + \text{c.c.}) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ — $\Gamma_{17}\Gamma_1/\Gamma$

VALUE (eV)	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
<12.5	90	[1] ABLIKIM	20S	BES3	$e^+e^- \to K^+K^-\pi^0\pi^0$

[1] By a simultaneous fit of the intermediate channels in a partial-wave analysis, assuming the same structure, modelled with a coherent sum of a nonresonant component and a resonant component by a Breit-Wigner function. A second solution of the fit with equal fit quality gives an upper limit value of 297.6 eV.

$\Gamma(K_1(1400)^+ K^- + \text{c.c.}) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ — $\Gamma_{18}\Gamma_1/\Gamma$

VALUE (eV)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
4.7±3.3	[1] ABLIKIM	20S	BES3	$e^+e^- \to K^+K^-\pi^0\pi^0$

[1] By a simultaneous fit of the intermediate channels in a partial-wave analysis, assuming the same structure, modelled with a coherent sum of a nonresonant component and a resonant component by a Breit-Wigner function. A second solution of the fit with equal fit quality gives a value of 98.8 ± 7.8 eV.

$\Gamma(K_2^*(1430)^+ K^- + \text{c.c.}) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ — $\Gamma_{19}\Gamma_1/\Gamma$

VALUE (eV)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
12.6±2.4	[1] ABLIKIM	22L	BES3	2.0–3.08 $e^+e^- \to K^+K^-\pi^0$

[1] From a solution of a simultaneous fit of the $K_2^*(1430)^+ K^-$ and $K^*(892)^+ K^-$ intermediate channels in a partial-wave analysis, assuming the same structure, modelled with a coherent sum of a nonresonant component and a resonant component by a Breit-Wigner function. The other solution gives 161.1 ± 20.6 eV.

$\phi(2170)$ $\Gamma(i)\Gamma(e^+e^-)/\Gamma^2(\text{total})$

$\Gamma(\phi\pi\pi)/\Gamma_{\text{total}} \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ — $\Gamma_4/\Gamma \times \Gamma_1/\Gamma$

VALUE (units 10^{-7})	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.65±0.15±0.18	4.8k	[1] SHEN	09	BELL	10.6 $e^+e^- \to K^+K^-\pi^+\pi^-\gamma$

[1] Multiplied by 3/2 to take into account the $\phi\pi^0\pi^0$ mode. Using B($\phi \to K^+K^-$) = (49.2 ± 0.6)%.

ϕ(2170) BRANCHING RATIOS

$\Gamma(\phi\pi\pi)/\Gamma_{total}$ — Γ_4/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	[1] ABLIKIM	23AX	BES3	$e^+ e^- \rightarrow \phi\pi^+\pi^-$

[1] From a fit to the $e^+ e^-$ cross section between 2.00 and 3.08 GeV with a sum of Breit-Wigner amplitude and a non-resonant contribution.

$\Gamma(K^+ K^- f_0(980) \rightarrow K^+ K^- \pi^+\pi^-)/\Gamma_{total}$ — Γ_8/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	AUBERT	07AK	BABR	10.6 $e^+ e^- \rightarrow K^+ K^- \pi^+\pi^-\gamma$

$\Gamma(K^+ K^- f_0(980) \rightarrow K^+ K^- \pi^0\pi^0)/\Gamma_{total}$ — Γ_{10}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	AUBERT	07AK	BABR	10.6 $e^+ e^- \rightarrow K^+ K^- \pi^0\pi^0\gamma$

$\Gamma(K^{*0} K^\pm \pi^\mp)/\Gamma_{total}$ — Γ_{11}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	AUBERT	07AK	BABR	10.6 GeV $e^+ e^-$

$\Gamma(K^*(892)^0 \overline{K}^*(892)^0)/\Gamma_{total}$ — Γ_{12}/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	ABLIKIM	10C	BES2	$J/\psi \rightarrow \eta K^+\pi^- K^-\pi^+$

ϕ(2170) REFERENCES

CHEN	25D	EPJ C85 1388	D.-Y. Chen *et al.*	
ABLIKIM	24AN	JHEP 2401 180	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	23AX	PR D108 032011	M. Ablikim *et al.*	(BESIII Collab.)
LICHARD	23	PR D108 092005	P. Lichard	(OPAV, CTUP)
ZHU	23	PR D107 012006	W. Zhu *et al.*	(BELLE Collab.)
ZHU	23A	CP C47 113003	W. Zhu, X. Wang	(RVUE)
ABLIKIM	22L	JHEP 2207 045	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	21AP	PR D104 092014	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	21T	PR D104 032007	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	20M	PR D102 012008	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	20S	PRL 124 112001	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	19I	PR D99 012014	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	19L	PR D99 032001	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	15H	PR D91 052017	M. Ablikim *et al.*	(BESIII Collab.)
LEES	12F	PR D86 012008	J.P. Lees *et al.*	(BABAR Collab.)
ABLIKIM	10C	PL B685 27	M. Ablikim *et al.*	(BES II Collab.)
SHEN	09	PR D80 031101	C.P. Shen *et al.*	(BELLE Collab.)
ABLIKIM	08F	PRL 100 102003	M. Ablikim *et al.*	(BES Collab.)
AUBERT	08S	PR D77 092002	B. Aubert *et al.*	(BABAR Collab.)
AUBERT	07AK	PR D76 012008	B. Aubert *et al.*	(BABAR Collab.)
AUBERT,BE	06D	PR D74 091103	B. Aubert *et al.*	(BABAR Collab.)