

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

$J/\psi(1S)$ MASS

VALUE (MeV)		EVTS	DOCUMENT ID		TECN	COMMENT
3096.900±0	.006 OUR AVER	RAGE				
3096.900 ± 0	$.002 \pm 0.006$		¹ ANASHIN	15	KEDR	$e^+e^- ightarrow$ hadrons
$3096.89 \ \pm 0$.09	502	² ARTAMONOV	00	OLYA	$e^+e^- ightarrow$ hadrons
3096.91 ± 0	$.03 \pm 0.01$		³ ARMSTRONG	93 B	E760	$\overline{p} p ightarrow e^+ e^-$
$3096.95 \ \pm 0$.1 ±0.3	193	BAGLIN	87	SPEC	$\overline{p}p \rightarrow e^+e^-X$
• • • We do	o not use the foll	owing dat	a for averages, fits	s, limi	ts, etc.	• • •
3096.66 ±0	$.19 \pm 0.02$	6.1k	⁴ AAIJ	15BI	LHCB	$p p ightarrow J/\psi X$
$3096.917 \!\pm\! 0$	$.010 \pm 0.007$		AULCHENKO	03	KEDR	$e^+e^- ightarrow$ hadrons
3097.5 ± 0	.3		GRIBUSHIN	96	FMPS	515 π^- Be $\rightarrow 2\mu X$
3098.4 ±2	.0	38k	LEMOIGNE	82	GOLI	185 π^- Be \rightarrow
3096.93 ±0 3097.0 ±1	.09	502	⁵ ZHOLENTZ ⁶ BRANDELIK	80 79c	REDE DASP	$\gamma \mu^+ \mu^- A$ $e^+ e^-$ $e^+ e^-$

¹ Supersedes AULCHENKO 03.

²Reanalysis of ZHOLENTZ 80 using new electron mass (COHEN 87) and radiative corrections (KURAEV 85).

³ Mass central value and systematic error recalculated by us according to Eq. (16) in ARMSTRONG 93B, using the value for the $\psi(2S)$ mass from AULCHENKO 03.

⁴ From a sample of $\eta_c(1S)$ and J/ψ produced in *b*-hadron decays. Systematic uncertainties not estimated. ⁵ Superseded by ARTAMONOV 00. ⁶ From a simultaneous fit to e^+e^- , $\mu^+\mu^-$ and hadronic channels assuming $\Gamma(e^+e^-)$

 $= \Gamma(\mu^+ \mu^-).$

$J/\psi(1S)$ WIDTH

VALUE (keV)	EVTS	DOCUMENT ID		TECN	COMMENT
92.6 ± 1.7 O	UR AVERAGE	Error includes scale	factor	of 1.1.	
$92.45 \pm 1.40 \pm 3$	1.48	¹ ANASHIN	20	KEDR	e ⁺ e ⁻
$96.1~\pm~3.2$	13k	² ADAMS	06A	CLEO	$e^+e^- \rightarrow \mu^+\mu^-\gamma$
$84.4~\pm~8.9$		BAI	95 B	BES	e ⁺ e ⁻
91 ± 11 ± 0	6	³ ARMSTRONG	93 B	E760	$\overline{p} p ightarrow e^+ e^-$
$85.5 \begin{array}{c} + & 6.1 \\ - & 5.8 \end{array}$		⁴ HSUEH	92	RVUE	See $arphi$ mini-review
• • • We do no	ot use the followi	ng data for averages	, fits,	limits, e	tc. ● ● ●
$92.94\pm~1.83$		^{5,6} ANASHIN	18A	KEDR	e ⁺ e ⁻
$94.1~\pm~2.7$		⁷ ANASHIN	10	KEDR	3.097 $e^+e^- \rightarrow$
93.7 \pm 3.5	7.8k	² AUBERT	04	BABR	$e^+e^-, \ \mu^+\mu^-$ $e^+e^- ightarrow \ \mu^+\mu^-\gamma$

 1 Based on the same dataset as ANASHIN 18A and correlated to the values reported there

- ²Calculated by us from the reported values of $\Gamma(e^+e^-) \times B(\mu^+\mu^-)$ using $B(e^+e^-) =$ $(5.94 \pm 0.06)\%$ and $B(\mu^+ \mu^-) = (5.93 \pm 0.06)\%$.
- ³ The initial-state radiation correction reevaluated by ANDREOTTI 07 in its Ref. [4]. ⁴ Using data from COFFMAN 92, BALDINI-CELIO 75, BOYARSKI 75, ESPOSITO 75B, BRANDELIK 79c.
- ⁵ Using Γ(e^+e^-) from ANASHIN 18A and B($J/\psi(1S) \rightarrow e^+e^-$) = (5.971 ± 0.032)% from PDG 16.
- ⁶Superseded by ANASHIN 20 that is based on the same dataset . ⁷Assuming $\Gamma(e^+e^-) = \Gamma(\mu^+\mu^-)$ and using $\Gamma(e^+e^-)/\Gamma_{\text{total}} = (5.94 \pm 0.06)\%$.

	Mode	Fraction (Γ_i/Γ)	Scale factor/ Confidence level
$ \begin{array}{c} \Gamma_1 \\ \Gamma_2 \\ \Gamma_3 \\ \Gamma_4 \\ \Gamma_5 \\ \Gamma_6 \\ \Gamma_7 \end{array} $	hadrons virtual $\gamma \rightarrow$ hadrons ggg γgg e^+e^- $e^+e^-\gamma$ u^+u^-	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	% % % ≪ 10 ^{−3}
• 7	Decays involving hadr	onic resonances	
$ \Gamma_8 \Gamma_9 \Gamma_{10} \Gamma_{11} \Gamma_{12} \Gamma_{13} \Gamma_{14} \Gamma_{15} $	$\rho \pi \\ \rho^{0} \pi^{0} \\ a_{2}(1320)^{0} \pi^{+} \pi^{-} \rightarrow \\ 2(\pi^{+} \pi^{-}) \pi^{0} \\ a_{2}(1320)^{+} \pi^{-} \pi^{0} + \text{c.c} \rightarrow \\ 2(\pi^{+} \pi^{-}) \pi^{0} \\ a_{2}(1320) \rho \\ \eta \pi^{+} \pi^{-} \\ \eta \rho \\ \eta \pi^{+} \pi^{-} \pi^{0} \\ \rho \\ \eta \\ \eta$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5 = 2.6 $< 10^{-3}$ $< 10^{-3}$ $< 10^{-3}$ $< 10^{-3}$ $< 10^{-4}$ $< 10^{-4}$ $< 0^{-4}$
Γ ₁₆ Γ ₁₇	$\eta \pi^+ \pi^- 3\pi^0$ $\eta \phi(2170) \rightarrow \eta \phi f_0(980) \rightarrow$ $\eta \phi \pi^+ \pi^-$	$(4.9 \pm 1.0) >$ $(1.2 \pm 0.4) >$	< 10 ⁻³ < 10 ⁻⁴
Γ ₁₈	$\eta \phi(2170) \rightarrow \eta K^*(892)^0 \overline{K}^*(892)^0$	< 2.52 >	< 10 ⁻⁴ CL=90%
$ \Gamma_{19} \\ \Gamma_{20} \\ \Gamma_{21} \\ \Gamma_{22} \\ \Gamma_{23} \\ \Gamma_{24} $	$ \eta K^{+} K^{-} \\ \eta K^{\pm} K^{0}_{S} \pi^{\mp} \\ \eta K^{*} (892)^{0} \overline{K}^{*} (892)^{0} \\ \rho \eta' (958) \\ \rho^{\pm} \pi^{\mp} \pi^{+} \pi^{-} 2\pi^{0} \\ \rho^{+} \rho^{-} \pi^{+} \pi^{-} \pi^{0} $	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$< 10^{-4}$ $< 10^{-3}$ $< 10^{-3}$ $< 10^{-5}$ S=1.6 $\frac{10^{-3}}{-3}$

$J/\psi(1S)$ DECAY MODES

Г ₂₅	$\rho^+ K^+ K^- \pi^- + \text{c.c} \rightarrow$		(3.5	±	0.8) × 10	0-3	
Г ₂₆	$\rho^{\mp} K^{\pm} K^{0}_{S}$		(1.9	±	0.4	$) \times 10$	0 ⁻³	
Γ ₂₇	$h_1(1415)\eta' \rightarrow \gamma \eta \eta'$								
Γ ₂₈	$h_1(1595)\eta' \rightarrow \gamma \eta \eta'$								
Γ ₂₉	$\rho(1450)\pi$		s	een					
Γ ₃₀	$\rho(1450)\pi \rightarrow \pi^+\pi^-\pi$	0	(2.2	±	1.1	$) \times 10$	0-4	
Γ ₃₁	$\rho(1450)^{\pm}\pi^{\mp} \rightarrow K^0_S k$	$(\pm \pi^{\mp})$	(3.3	±	0.6) × 10	0-4	
Γ ₃₂	$\rho(1450)^0 \pi^0 \rightarrow K^+ K$	$-\pi^0$	(2.7	±	0.6	$) \times 10$	0-4	
Γ ₃₃	$\rho(1450)\eta'(958) \rightarrow$		(3.3	±	0.7) × 10	0-6	
	$\pi^{+}\pi^{-}\eta'(958)$								
Г ₃₄	$\rho(1700)\pi$		s	een					
Γ ₃₅	$\rho(1700)\pi \rightarrow \pi^+\pi^-\pi$	0	(1.6	±	1.1	$) \times 10$	0-4	
Г ₃₆	$\rho(2150)\pi$		s	een					
Γ ₃₇	$\rho(2150)\pi \rightarrow \pi^+\pi^-\pi$	0	(1	L0	±۷	40	$) \times 10$	0-6	
Γ ₃₈	$\rho_3(1690)\pi \to \pi^+\pi^-\pi^0$								
Γ ₃₉	$\omega \pi^0$		(4.5	±	0.5	$) \times 10$	0-4	S=1.4
Γ ₄₀	$\omega \pi^0 \rightarrow \pi^+ \pi^- \pi^0$		(1.6	±	0.7) × 10	0-5	
Γ ₄₁	$\omega \pi^+ \pi^-$		(8.5	±	1.0) × 10	0 ⁻³	S=1.3
Γ ₄₂	$\omega \pi^0 \pi^0$		(3.4	±	0.8) × 10	0-3	
Γ ₄₃	$\omega 3\pi^0$		(1.9	±	0.6) × 10	0-3	
Γ ₄₄	$\omega f_2(1270)$		(4.3	±	0.6	$) \times 10$	0-3	
Γ ₄₅	$\omega \eta$		(1.74	±	0.20	$) \times 10$	0-3	S=1.6
Γ ₄₆	$\omega \pi^+ \pi^- \pi^0$		(4.0	±	0.7	$) \times 10$	0-3	
Γ ₄₇	$\omega \pi^0 \eta$		(3.4	±	1.7	$) \times 10$	0 ⁻⁴	
Г ₄₈	$\omega \pi^+ \pi^+ \pi^- \pi^-$		(8.5	\pm	3.4	$) \times 10$	0-3	
Γ ₄₉	$\omega \pi^+ \pi^- 2\pi^0$		(3.3	±	0.5) %		
Γ ₅₀	$\omega \eta' \pi^+ \pi^-$		(1.12	\pm	0.13	$) \times 10$	0-3	
Γ ₅₁	$\omega \eta'(958)$		(1.89	±	0.18	$) \times 10$	0-4	
Г ₅₂	$\omega f_0(980)$		(1.4	±	0.5	$) \times 10$	0-4	
Г ₅₃	$\omega f_0(1710) \rightarrow \omega K \overline{K}$		(4.8	±	1.1	$) \times 10$	0-4	
Г ₅₄	$\omega f_1(1420)$		(6.8	±	2.4	$) \times 10$	0-4	
Г ₅₅	$\omega f_2'(1525)$		<	2.2			imes 10	0-4	CL=90%
Г ₅₆	$\omega X(1835) \rightarrow \omega p \overline{p}$		<	3.9			imes 10	0-6	CL=95%
Γ ₅₇	$\omega X(1835), X \rightarrow \eta' \pi^+$	π^{-}	<	6.2			imes 10	0-5	
Г ₅₈	$\omega K^+ K^-$		(1.52	±	0.31	$) \times 10$	0-3	
Г ₅₉	$\omega K^{\pm} K^0_S \pi^{\mp}$		[b] (3.4	±	0.5	$) \times 10$	0-3	
Г ₆₀	$\omega K \overline{K}$		(1.9	±	0.4	$) \times 10$	0-3	
Γ ₆₁	$\omega K^*(892)\overline{K}$ + c.c.		(6.1	±	0.9	$) \times 10$	0-3	
Г ₆₂	$\eta' K^{*\pm} K^{\mp}$		(1.48	±	0.13	$) \times 10$	0-3	
Г ₆₃	$\eta' K^{*0} K^0 + \text{c.c.}$		(1.66	±	0.21	$) \times 10$	0-3	
Г ₆₄	$\eta' h_1(1415) \rightarrow \eta' K^* K +$	- C.C.	(2.16	±	0.31	$) \times 10$	0-4	
Г ₆₅	$\eta' h_1(1415) \rightarrow \eta' K^{*\pm} K$	+	(1.51	±	0.23	$) \times 10$	0 ⁻⁴	
Г ₆₆	$\eta' h_1(1415) ightarrow \gamma \eta' \eta'$		(4.7	+	1.1 2.0) imes 1	0-7	
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Г ₆₇	$\overline{K}K^{*}(892)+c.c.$	seen					
Г ₆₈	$\overline{\mathcal{K}} {\mathcal{K}}^{st}(892) + ext{c.c.} ightarrow {\mathcal{K}}^{0}_{\mathcal{S}} {\mathcal{K}}^{\pm} \pi^{\mp}$	(4.8	±	0.5) ×	10 ⁻³	
Г ₆₉	$K^+ K^* (892)^- + c.c.$	(6.0	+ -	0.8 1.0) ×	10-3	S=2.9
Γ ₇₀	${\mathcal K}^+ {\mathcal K}^*(892)^- + { m c.c.} ightarrow {\mathcal K}^+ {\mathcal K}^- {}_{\pi}{}^0$	(2.69	+ -	0.13 0.20) ×	10-3	
Γ ₇₁	$\mathcal{K}^+ \mathcal{K}^*(892)^- + ext{ c.c. } ightarrow \mathcal{K}^0 \mathcal{K}^\pm \pi^\mp + ext{ c.c. }$	(3.0	±	0.4) ×	10-3	
Γ ₇₂	$K^0 \overline{K}^* (892)^0 + \text{c.c.}$	(4.2	±	0.4) ×	10-3	
Г ₇₃	$\mathcal{K}^0\overline{\mathcal{K}}^*(892)^0+ ext{ c.c.} ightarrow \mathcal{K}^0\mathcal{K}^\pm\pi^\mp+ ext{ c.c.}$	(3.2	±	0.4) ×	10-3	
Γ ₇₄	$\overline{K}^{*}(892)^{0}K^{+}\pi^{-}$ + c.c.	(5.7	±	0.8) ×	10-3	
Γ ₇₅	$K^{*}(892)^{\pm}K^{\mp}\pi^{0}$	(4.1	\pm	1.3) ×	10-3	
Г ₇₆	$K^{*}(892)^{+}K^{0}_{S}\pi^{-}$ + c.c.	(2.0	±	0.5) ×	10-3	
Γ ₇₇	$K^{*}(892)^{+}K^{0}_{S}\pi^{-}+ ext{ c.c.} ightarrow$	(6.7	\pm	2.2) ×	10 ⁻⁴	
	$K^0_{S}K^0_{S}\pi^+\pi^-$						
Г ₇₈	$K^{*}(892)^{0}K^{-}\pi^{+}+\text{ c.c.} \rightarrow K^{+}K^{-}\pi^{+}\pi^{-}$	(3.8	±	0.5) ×	10-3	
Г ₇₉	$K^{*}(892)^{0} K^{0}_{S} \rightarrow \gamma K^{0}_{S} K^{0}_{S}$	(6.3	+	0.6 0.5) ×	10 ⁻⁶	
Г ₈₀	$K^*(892)^0 K^0_S \pi^0$	(7	\pm	4) ×	10 ⁻⁴	
Г ₈₁	$K^{*}(892)^{\pm}K^{*}(700)^{\mp}$	(1.1	+	1.0 0.6) ×	10-3	
Г ₈₂	$K^{*}(892)^{0}\overline{K}^{*}(892)^{0}$	(2.3	\pm	0.6) ×	10^{-4}	
Г ₈₃	$K^{*}(892)^{\pm}K^{*}(892)^{\mp}$	(1.00	+	0.22 0.40) ×	10-3	
Г ₈₄	$K_1(1400)^{\pm}K^{\mp}$	(3.8	\pm	1.4) ×	10-3	
Г ₈₅	$K^*(1410)\overline{K}$ +c.c.	seen					
Г ₈₆	$egin{array}{l} {\cal K}^*(1410){\cal K}+{ m c.c} ightarrow \ {\cal K}^\pm{\cal K}^\mp\pi^0 \end{array}$	(7	±	4) ×	10 ⁻⁵	
Г ₈₇	$egin{array}{lll} {\cal K}^*(1410)\overline{K}+{ m c.c.} ightarrow {\cal K}^0_{S}{\cal K}^\pm\pi^\mp \end{array}$	(8	±	5) ×	10 ^{—5}	
Г ₈₈	$K_2^*(1430)\overline{K}$ +c.c.	seen					
Г ₈₉	$\mathcal{K}^*_2(1430)\overline{\mathcal{K}}+ ext{c.c.} ightarrow \mathcal{K}^\pm\mathcal{K}^\mp\pi^0$	(1.0	±	0.5) ×	10 ⁻⁴	
Г ₉₀	$ \begin{array}{c} \kappa_{2}^{*}(1430)\overline{K} + \text{c.c.} \rightarrow \\ \kappa_{5}^{0} \kappa^{\pm} \pi^{\mp} \end{array} $	(3.8	±	1.0) ×	10 ⁻⁴	
Γ ₉₁	$\overline{K}_{2}^{*}(1430)K + \text{c.c.}$	< 4.0			×	10-3	CL=90%
Г ₉₂	$\mathcal{K}_{2}^{*}(1430)^{+}\mathcal{K}^{-}+\text{c.c.} ightarrow$	(2.69	+ -	0.25 0.19) ×	10 ⁻⁴	
Г ₉₃	$K_{2}^{*}(1430)^{0}K^{-}\pi^{+} + \text{c.c.} \rightarrow$	(2.6	±	0.9) ×	10-3	
Г ₉₄	$K^{+}K^{-}\pi^{+}\pi^{-}$ $K_{2}^{*}(1430)^{+}K_{5}^{0}\pi^{-}$ + c.c.	(3.6	±	1.8) ×	10-3	
Γ ₉₅	$\overline{K_{2}^{*}}(1430)^{0} K^{*}(892)^{0} + \text{c.c.}$	(4.67	±	0.29) ×	10-3	
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Г ₉₆	$K_2^*(1430)^- K^*(892)^+ + ext{ c.c.}$	(3	8.4 ±	2.9	$) imes 10^{-3}$	
Г ₉₇	$K_{2}^{*}(1430)^{-} K^{*}(892)^{+} +$	(4	⊦ ±	= 4	$) \times 10^{-4}$	
	c.c. $\rightarrow K^*(892)^+ K_S^0 \pi^- +$					
Г ₉₈	$K_2^*(1430)^0 \overline{K}_2^*(1430)^0$	< 2	2.9		imes 10 ⁻³	CL=90%
Г ₉₉	$\frac{\overline{K_{2}}(1770)^{0} K^{\overline{*}}(892)^{0} + \text{c.c.} \rightarrow}{K^{*}(892)^{0} K^{-} \pi^{+} + \text{c.c.}}$	(6	5.9 ±	- 0.9) × 10 ⁻⁴	
Γ ₁₀₀	$egin{array}{l} {\mathcal K}_2^*(1980)^+{\mathcal K}^-+{ m c.c.} ightarrow \ {\mathcal K}^+{\mathcal K}^-\pi^0 \end{array}$	(1	10 +	- 0.60 - 0.14	$^{0}_{1}$) $ imes$ 10 $^{-5}$	
Γ ₁₀₁	$egin{array}{l} {\cal K}^*_4(2045)^+{\cal K}^-+{ m c.c.} ightarrow {\cal K}^+{\cal K}^-\pi^0 \end{array}$	(6	5.2 +	- 2.9 - 1.6) × 10 ⁻⁶	
Γ ₁₀₂	$K_1(1270)^\pm K^\mp$	< 3	8.0		imes 10 ⁻³	CL=90%
Γ ₁₀₃	$K_1(1270)K_S^0 \rightarrow \gamma K_S^0 K_S^0$	(8	8.5 ±	2.5	$) \times 10^{-7}$	
Γ ₁₀₄	$a_2(1320)^{\pm}\pi^{\mp}$	[b] < 4	.3		imes 10 ⁻³	CL=90%
Γ_{105}	$\phi \pi^{0}$	3 imes 1	0 ⁻⁶ c	or $1 imes$	10^{-7}	
Γ_{106}	$\phi \pi^+ \pi^-$	(9	9.4 ±	1.5	$) \times 10^{-4}$	S=1.7
Γ ₁₀₇	$\phi \pi^0 \pi^0$	(5	5.0 ±	= 1.0	$) \times 10^{-4}$	
Γ ₁₀₈	$\phi 2(\pi^+\pi^-)$	(1	60 ±	= 0.32	2) × 10 ⁻³	
Γ ₁₀₉	$\phi \eta_{\perp}$	(7	′.4 ±	- 0.6) × 10 ⁻⁴	S=1.2
Γ_{110}	$\phi \eta'(958)$	(4	ŀ.6 ±	- 0.5) × 10 ⁻⁴	S=2.2
Γ ₁₁₁	$\phi \eta \eta'$	(2	2.32 ±	= 0.17	7) $\times 10^{-4}$	
Γ ₁₁₂	$\phi f_0(980)$	(3	3.2 ±	- 0.9	$) \times 10^{-4}$	S=1.9
Γ ₁₁₃	$\phi f_0(980) \rightarrow \phi \pi^+ \pi^-$	(2	2.60 ±	= 0.34	↓)×10 ⁻⁴	
Γ_{114}	$\phi f_0(980) \rightarrow \phi \pi^0 \pi^0$	(1	8 ±	- 0.5) × 10 ⁻⁴	
Γ ₁₁₅	$\phi \pi^0 f_0(980) \to \phi \pi^0 \pi^+ \pi^-$	(4	ŀ.5 ±	= 1.0) × 10 ⁻⁶	
Γ ₁₁₆	$\phi \pi^0 f_0(980) \rightarrow \phi \pi^0 p^0 \pi^0$	(1	7 ±	- 0.6	$) \times 10^{-6}$	
Γ ₁₁₇	$\phi f_0(980) \eta \rightarrow \eta \phi \pi^+ \pi^-$	(3	3.2 ±	= 1.0) × 10 ⁻⁴	
Γ ₁₁₈	$\phi a_0(980)^0 \rightarrow \phi \eta \pi^0$	(4	.4 ±	= 1.4	$) \times 10^{-6}$	
Г ₁₁₉	$\phi f_2(1270)$	(3	3.2 ±	0.6	$) \times 10^{-4}$	
Γ ₁₂₀	$\phi f_1(1285)$	(2	2.6 ±	- 0.5	$) \times 10^{-4}$	
Γ ₁₂₁	$\phi f_1(1285) \rightarrow \phi \pi^0 f_0(980) \rightarrow$	(9	9.4 ±	2.8	$) \times 10^{-7}$	
Г ₁₂₂	$\phi \pi^{0} \pi^{+} \pi^{-} \phi f_{1}(1285) \rightarrow \phi \pi^{0} f_{0}(980) \rightarrow \phi 3\pi^{0}$	(2	2.1 ±	= 2.2) × 10 ⁻⁷	
Γ ₁₂₃	$\phi \eta$ (1405) $\rightarrow \phi \eta \pi^+ \pi^-$	(2	2.0 ±	= 1.0	$) imes 10^{-5}$	
Γ ₁₂₄	$\phi f'_{2}(1525)$	(8	3 ±	= 4	$) \times 10^{-4}$	S=2.7
Γ ₁₂₅	$\phi X(1835) \rightarrow \phi p \overline{p}$	< 2	2.1		× 10 ⁻⁷	CL=90%
Γ ₁₂₆	$\phi X(1835) \rightarrow \phi \eta \pi^+ \pi^-$	< 2	2.8		$\times 10^{-4}$	CL=90%
Γ ₁₂₇	$\phi X(1870) \rightarrow \phi \eta \pi^+ \pi^-$	< 6	i.13		imes 10 ⁻⁵	CL=90%
Γ ₁₂₈	$\phi K \overline{K}$	(1	77 ±	= 0.16	5) $\times 10^{-3}$	S=1.3
Γ ₁₂₉	$\phi f_0(1710) \rightarrow \phi K \overline{K}$, (3	8.6 ±	- 0.6	$) \times 10^{-4}$	
Γ_{130}	$\phi \tilde{K}^+ K^-$	(8	8.3 ±	= 1.1	$) \times 10^{-4}$	
Γ ₁₃₁	$\phi K^0_S K^0_S$	(5	5.9 ±	1.5	$) imes 10^{-4}$	

Г ₁₃₂	$\phi K^{\pm} K^0_S \pi^{\mp}$	[b] (7.2 \pm 0.8) $ imes$ 10 $^{-4}$	
Γ ₁₃₃	$\phi K^*(892)\overline{K}$ + c.c.	(2.18 \pm 0.23) $\times10^{-3}$	
Γ ₁₃₄	$b_1(1235)^{\pm}\pi^{\mp}$	[b] (3.0 \pm 0.5) $ imes$ 10 $^{-3}$	
Γ ₁₃₅	$b_1(1235)^0 \pi^0$	(2.3 \pm 0.6) $ imes$ 10 $^{-3}$	
Γ ₁₃₆	$f'_{2}(1525)K^{+}K^{-}$	(1.04 \pm 0.35) $\times10^{-3}$	
Γ ₁₃₇	$\overline{\Delta(1232)^+ p}$	$<$ 1 $ imes 10^{-4}$ C	L=90%
Γ ₁₃₈	$\Delta(1232)^{++}\overline{p}\pi^{-}$	(1.6 \pm 0.5) $ imes$ 10 $^{-3}$	
Γ ₁₃₉	$\Delta(1232)^{++}\overline{\Delta}(1232)^{}$	(1.10 \pm 0.29) $\times10^{-3}$	
Γ ₁₄₀	$\overline{\Sigma}(1385)^0 p K^-$	(5.1 \pm 3.2) $ imes$ 10 $^{-4}$	
Γ_{141}	$\Sigma(1385)^{0}\overline{A}+$ c.c.	$< 8.2 \times 10^{-6} C$	L=90%
Γ ₁₄₂	$\Sigma(1385)^{-}\overline{\Sigma}^{+}$ + c.c.	[b] (3.0 \pm 0.7) \times 10 ⁻⁴	
Γ ₁₄₃	$\Sigma(1385)^+ \underline{\Sigma}^- + \text{c.c.}$	$(3.3 \pm 0.8) \times 10^{-4}$	
Г ₁₄₄	$\Sigma(1385)^{-} \Sigma(1385)^{+} + \text{c.c.}$	[b] (1.08 \pm 0.06) \times 10 ⁻³	
Γ ₁₄₅	$\Sigma(1385)^+ \Sigma(1385)^- + c.c.$	$(1.25 \pm 0.07) \times 10^{-3}$	
Γ ₁₄₆	$\Sigma(1385)^{0}\Sigma(1385)^{0}$	$(1.07 \pm 0.08) \times 10^{-3}$	
Г ₁₄₇	Λ (1520) Λ + c.c. $\rightarrow \gamma \Lambda \Lambda$	$< 4.1 \times 10^{-6} C$	L=90%
Γ ₁₄₈	$\Lambda(1520)\Lambda + c.c.$	$< 1.80 \times 10^{-3} C$	L=90%
l ₁₄₉		$(1.17 \pm 0.04) \times 10^{-3}$	
I 150	$=(1530)^{-}=^{+}+$ c.c.	$(3.18 \pm 0.08) \times 10^{-4}$	
l ₁₅₁	$=(1530)^{\circ}=^{\circ}$	$(3.2 \pm 1.4) \times 10^{-4}$	
I ₁₅₂	$\Theta(1540) \Theta(1540) \rightarrow$	[c] < 1.1	L=90%
_	$K_{S}^{\circ}pK$ $n+$ c.c.	F	
I 153	$\Theta(1540) K^- \overline{n} \rightarrow K^0_S p K^- \overline{n}$	[c] < 2.1	L=90%
Г ₁₅₄	$\underline{\Theta}(1540)K_{S}^{0}\overline{p} \rightarrow K_{S}^{0}\overline{p}K^{+}n$	$[c] < 1.6 \times 10^{-5} C$	L=90%
Γ ₁₅₅	$\Theta(1540) K^+ n \rightarrow K^0_S \overline{p} K^+ n$	$[c] < 5.6 10^{-5} C$	L=90%
Γ ₁₅₆	$\Theta(1540) K^0_S p \rightarrow K^0_S p K^- \overline{n}$	$[c] < 1.1 \times 10^{-5} C$	L=90%
	Decays into sta	able hadrons	
-	2(+ -) 0		·

l ₁₅₇	$2(\pi^+\pi^-)\pi^0$	$(4.2 \pm 0.4)\%$	S=2.1
Γ ₁₅₈	$3(\pi^{+}\pi^{-})\pi^{0}$	(2.9 \pm 0.6)%	
Γ ₁₅₉	$\pi^{+}\pi^{-}3\pi^{0}$	(1.9 \pm 0.9)%	
Γ ₁₆₀	$\rho^{\pm}\pi^{\mp}\pi^{0}\pi^{0}$	(1.41 \pm 0.22) %	
Γ ₁₆₁	$\rho^+ \rho^- \pi^0$	(6.0 \pm 1.1) $ imes$ 10 ⁻³	
Γ ₁₆₂	$\pi^{+}\pi^{-}4\pi^{0}$	(6.5 \pm 1.3) $ imes$ 10 $^{-3}$	
Γ ₁₆₃	$\pi^+\pi^-\pi^0$	(2.00 \pm 0.07)%	S=2.0
Γ ₁₆₄	$2(\pi^{+}\pi^{-}\pi^{0})$	(1.61 \pm 0.20)%	
Γ ₁₆₅	$\pi^{+}\pi^{-}\pi^{0}K^{+}K^{-}$	(1.52 \pm 0.27) %	S=1.4
Γ ₁₆₆	$\pi^+\pi^-$	(1.47 \pm 0.14) $ imes$ 10 $^{-4}$	
Γ ₁₆₇	$2(\pi^{+}\pi^{-})$	(3.20 \pm 0.25) $ imes$ 10 $^{-3}$	S=1.2
Γ ₁₆₈	$3(\pi^{+}\pi^{-})$	(4.3 \pm 0.4) $ imes$ 10 $^{-3}$	
Γ ₁₆₉	$2(\pi^+\pi^-)3\pi^0$	(6.2 \pm 0.9)%	
Γ ₁₇₀	$4(\pi^+\pi^-)\pi^0$	(9.0 \pm 3.0) $ imes$ 10 $^{-3}$	
Γ ₁₇₁	$2(\pi^+\pi^-)\eta$	(2.29 \pm 0.28) $\times10^{-3}$	
Γ ₁₇₂	$3(\pi^+\pi^-)\eta$	(7.2 \pm 1.5) $ imes$ 10 ⁻⁴	

Г ₁₇₃	$2(\pi^{+}\pi^{-}\pi^{0})\eta$	(1.6 \pm 0.5) $ imes$ 10 $^{-3}$
Γ ₁₇₄	$\pi^+\pi^-\pi^0\pi^0\eta$	(2.4 \pm 0.5) $ imes$ 10 $^{-3}$
Г ₁₇₅	$ ho^{\pm} \pi^{\mp} \pi^{0} \eta$	(1.9 \pm 0.8) $ imes$ 10 $^{-3}$
Γ ₁₇₆	K^+K^-	(2.86 \pm 0.21) $ imes$ 10 ⁻⁴
Γ ₁₇₇	$K^0_S K^0_L$	(1.95 \pm 0.11) \times 10 ⁻⁴ S=2.4
Γ ₁₇₈	$K^0_{\varsigma}K^0_{\varsigma}$	$<$ 1.4 $\times 10^{-8}$ CL=95%
Γ ₁₇₉	$K\overline{K}\pi$	$(6.1 \pm 1.0) imes 10^{-3}$
Γ ₁₈₀	$K^+ K^- \pi^0$	$(2.88 \pm 0.12) \times 10^{-3}$
Γ ₁₈₁	$K^0_{S}K^{\pm}\pi^{\mp}$	$(5.3 \pm 0.5) \times 10^{-3}$
Γ ₁₈₂	$K_{S}^{0}K_{I}^{0}\pi^{0}$	(2.06 \pm 0.26) $ imes$ 10 $^{-3}$
Γ ₁₈₃	$\mathcal{K}^{*}(892)^{0}\overline{\mathcal{K}}^{0} + \text{c.c.} \rightarrow \mathcal{K}^{0}\mathcal{K}^{0}\mathcal{K}^{0}\mathcal{K}^{0}$	$(1.21 \pm 0.18) \times 10^{-3}$
г	$K_{S}K_{L}^{n}$	(1 2) 1 2) 10-4
I 184	$\kappa_2(1430)^\circ \kappa^\circ + \text{c.c.} \rightarrow$	$(4.3 \pm 1.3) \times 10^{-4}$
	$K_{S}^{0}K_{L}^{0}\pi^{0}$	
Γ ₁₈₅	$K^{+}K^{-}\pi^{+}\pi^{-}$	$(7.0 \pm 1.0) \times 10^{-3}$
Γ ₁₈₆	$K^{+}K^{-}\pi^{0}\pi^{0}$	$(2.13 \pm 0.22) \times 10^{-3}$
Γ ₁₈₇	$K^+ K^- \pi^0 \pi^0 \pi^0$	$(1.61 \pm 0.29) \times 10^{-3}$
Г ₁₈₈	$K_{S}^{0}K^{\pm}\pi^{+}\pi^{0}\pi^{0}$	$(5.3 \pm 0.7) \times 10^{-3}$
Γ ₁₈₉	$K_{S}^{0}K^{\pm}\pi^{+}\pi^{+}\pi^{-}$	$(6.3 \pm 0.4) \times 10^{-3}$
Γ ₁₉₀	$K^0_S K^{\pm} \rho(770)^{\pm} \pi^0$	(2.9 \pm 0.8) $ imes$ 10 $^{-3}$
Γ ₁₉₁	$K_{S}^{0} K_{I}^{0} \pi^{+} \pi^{-}$	(3.8 \pm 0.6) $ imes$ 10 $^{-3}$
Г ₁₉₂	$K^{\bar{0}}_{S}K^{\bar{0}}_{I}\pi^{0}\pi^{0}$	$(1.9 \pm 0.4) imes 10^{-3}$
Γ ₁₉₃	$K^{\breve{0}}_{S}K^{\breve{0}}_{I}\eta$	(1.45 \pm 0.33) $ imes$ 10 $^{-3}$
Γ ₁₀₄	$K_{c}^{0}K_{c}^{0}\pi^{+}\pi^{-}$	$(1.68 \pm 0.19) \times 10^{-3}$
Γ ₁₀₅	$K^{\mp}K^{0}_{c}\pi^{\pm}\pi^{0}$	$(5.7 \pm 0.5) \times 10^{-3}$
Γ ₁₀₆	$K_{c}^{0}K^{\pm}\pi^{\mp}\rho(770)^{0}$	$(3.1 \pm 0.5) \times 10^{-3}$
Γ ₁₀₇	$K^{+}K^{-}2(\pi^{+}\pi^{-})$	$(3.1 + 1.3) \times 10^{-3}$
Γ ₁₀₀	$K^+ K^- \pi^+ \pi^- n$	$(4.7 + 0.7) \times 10^{-3}$
Γ ₁₀₀	$2(K^+K^-)$	$(7.2 \pm 0.8) \times 10^{-4}$
Γ200	$\dot{K}^+ K^- K_c^0 K_c^0$	$(4.2 \pm 0.7) \times 10^{-4}$
Γ ₂₀₁	$K_{c}^{0}K^{*}(892)^{0}\pi^{+}\pi^{-}$	$(1.7 + 0.6) \times 10^{-3}$
F201	$K_{0}^{0} K^{*}(892)^{0} \pi^{0} \pi^{0}$	$(101 + 018) \times 10^{-3}$
· 202	$K^{\mp} K^{*} (892)^{\pm} \pi^{+} \pi^{-}$	$(34 + 12) \times 10^{-3}$
	$K^{*}(892)^{\pm}K^{*}(892)^{0}\pi^{\mp}$	$(3.4 \pm 1.2) \times 10^{-3}$
· 204	$K^{\mp} K^{*} (892)^{\pm} \pi^{0} \pi^{0}$	$(1.57 \pm 0.32) \times 10^{-3}$
- 205 Fanc	$K^{*}(892)^{+}K^{*}(892)^{-}\pi^{0}$	$(1.37 \pm 0.32) \times 10^{-10}$
· 200	$n\overline{n}$	$(2120 \pm 0.029) \times 10^{-3}$
· 207	$p \overline{p} \pi^0$	$(1.19 + 0.08) \times 10^{-3}$ S=1 1
· 200	$p \overline{p} \pi^+ \pi^-$	$(6.0 \pm 0.5) \times 10^{-3}$ S=1.3
F210	$p\overline{p}\pi^+\pi^-\pi^0$	$[d] (2.3 \pm 0.9) \times 10^{-3} S=1.9$
F ₂₁₁	$p \overline{p} \eta$	$(2.00 \pm 0.12) \times 10^{-3}$
Γ ₂₁₂	ρ _ρ ρ	$< 3.1 \times 10^{-4} \text{ CL}=90\%$
Z1 Z		

Г ₂₁₃	$p \overline{p} \omega$		(9.8	\pm	1.0) ×	10^{-4}	S=1.3
Γ ₂₁₄	$p \overline{p} \eta'(958)$		(1.29	±	0.14) ×	10^{-4}	S=2.0
Γ ₂₁₅	$p \overline{p} a_0(980) \rightarrow p \overline{p} \pi^0 \eta$		(6.8	±	1.8) ×	10^{-5}	
Γ ₂₁₆	$p \overline{p} \phi$		(5.19	\pm	0.33) ×	10^{-5}	
Γ ₂₁₇	$p \overline{n} \pi^-$		(2.12	\pm	0.09) ×	10^{-3}	
Γ ₂₁₈	n <u>n</u>		(2.09	±	0.16) ×	10^{-3}	
Γ ₂₁₉	$n\overline{n}\pi^+\pi^-$		(4	±	4) ×	10-3	
Γ ₂₂₀	nN(1440)		s	een					
Γ ₂₂₁	n N(1520)		s	een					
Γ ₂₂₂	n <u>N</u> (1535)		s	een					
Γ ₂₂₃	$\overline{\Lambda}\overline{\Lambda}$		(1.88	\pm	0.08) ×	10^{-3}	S=2.6
Γ ₂₂₄	$\Lambda \Lambda \pi^0$		(3.8	\pm	0.4) ×	10^{-5}	
Γ ₂₂₅	$\Lambda \underline{\Lambda} \pi^+ \pi^-$		(4.3	\pm	1.0) ×	10^{-3}	
Γ ₂₂₆	$\Lambda \underline{\Lambda} \eta$		(1.62	±	0.17) ×	10-4	
Г ₂₂₇	$\Lambda \underline{\Sigma}^{-} \pi^{+} + \text{c.c.}$	[<i>b</i>]	(1.26	±	0.05) ×	10^{-3}	S=1.2
Γ ₂₂₈	$\Lambda \Sigma^+ \underline{\pi}^- + \text{c.c.}$		(1.21	±	0.07) ×	10^{-3}	S=1.8
Г ₂₂₉	$pK^{-}\Lambda + c.c.$		(8.6	±	1.1) ×	10-4	
Γ ₂₃₀	$\underline{p}K^{-}\Sigma^{0}$		(2.9	±	0.8) ×	10^{-4}	
Г ₂₃₁	$\Lambda n K_S^0 + \text{c.c.}$		(6.5	±	1.1) ×	10^{-4}	
Γ ₂₃₂	$\Lambda \overline{\Sigma}$ + c.c.		(2.83	\pm	0.23) ×	10^{-5}	
Γ ₂₃₃	$\Sigma^+ \overline{\Sigma}^-$		(1.07	\pm	0.04) ×	10^{-3}	
Γ ₂₃₄	$\Sigma^0 \Sigma^0$		(1.172	<u>2</u> ±	0.032	2) ×	10^{-3}	S=1.4
Г ₂₃₅	$\Sigma^+ \underline{\Sigma}^- \eta$		(6.3	±	0.4) ×	10^{-5}	
Γ ₂₃₆	<u>=</u> -=+		(9.7	±	0.8) ×	10^{-4}	S=1.4
	Radiative	deca	VS						
Г237	$\gamma \eta_c(1S)$, (1.41	±	0.14) %	, D	S=1.3
Γ ₂₃₈	$\gamma \eta_c(1S) \rightarrow 3\gamma$		Ś	een			,		
Γ230	$\gamma \eta_c(1S) \rightarrow \gamma \eta \eta \eta'$		s	een					
Γ ₂₄₀	3γ		(1.16	±	0.22) ×	10-5	
Γ ₂₄₁	4γ		<`	9			×	10-6	CL=90%
Γ ₂₄₂	5γ		<	1.5			×	10^{-5}	CL=90%
Γ ₂₄₃	$\gamma \pi^0$		(3.39	±	0.08) ×	10^{-5}	
Γ ₂₄₄	$\gamma \pi^0 \pi^0$		(1.15	±	0.05) ×	10^{-3}	
Γ ₂₄₅	$\gamma 2\pi^+ 2\pi^-$		(2.8	±	0.5) ×	10^{-3}	S=1.9
Γ ₂₄₆	$\gamma f_2(1270) f_2(1270)$		(9.5	\pm	1.7) ×	10^{-4}	
Γ ₂₄₇	$\gamma f_2(1270) f_2(1270)$ (non reso-		(8.2	\pm	1.9) ×	10^{-4}	
	nant)								
Г ₂₄₈	$\gamma \pi^+ \pi^- 2\pi^0$		(8.3	\pm	3.1) ×	10-3	
Γ ₂₄₉	$\gamma K_S^0 K_S^0$		(8.1	\pm	0.4) ×	10^{-4}	
Γ ₂₅₀	$\gamma(K\overline{K}\pi) \left[J^{PC} = 0^{-+}\right]$		(7	\pm	4) ×	10^{-4}	S=2.1
Γ ₂₅₁	$\gamma K^+ K^- \pi^+ \pi^-$		(2.1	\pm	0.6) ×	10^{-3}	
Γ ₂₅₂	$\gamma \mathcal{K}^{*}(892) \overline{\mathcal{K}}^{*}(892)$		(4.0	±	1.3) ×	10 ⁻³	
Γ_{253}^{-5-}	$\gamma\eta$		(1.090)±	0.013	3) ×	10^{-3}	
							-		

Г ₂₅₄	$\gamma \eta \pi^0$	(2.14 \pm 0.31) $\times10^{-5}$	
Γ ₂₅₅	$\gamma f_0(500) \rightarrow \gamma \pi \pi$		
Γ ₂₅₆	$\gamma f_0(500) \rightarrow \gamma K \overline{K}$		
Γ ₂₅₇	$\gamma f_0(500) \rightarrow \gamma \eta \eta$		
Γ_{258}	$\gamma a_0(980)^0 \rightarrow \gamma \eta \pi^0$	$< 2.5 \times 10^{-6}$	CL=95%
Γ ₂₅₉	$\gamma a_2(1320)^0 \rightarrow \gamma \eta \pi^0$	$< 6.6 \times 10^{-6}$	CL=95%
$\Gamma_{260}^{-0.0}$	$\gamma \eta \pi \pi$	(6.1 \pm 1.0) $ imes$ 10 ⁻³	
Γ ₂₆₁	$\gamma \eta_2(1870) \rightarrow \gamma \eta \pi^+ \pi^-$	$(6.2 \pm 2.4) \times 10^{-4}$	
Γ ₂₆₂	$\gamma \eta'(958)$	$(5.28 \pm 0.06) \times 10^{-3}$	S=1.3
Γ ₂₆₃	$\gamma f_0(980) \rightarrow \gamma \pi \pi$		
Γ ₂₆₄	$\gamma f_0(980) \rightarrow \gamma K \overline{K}$		
Γ ₂₆₅	$\gamma \rho \rho$	(4.5 \pm 0.8) $ imes$ 10 $^{-3}$	
Г ₂₆₆	$\gamma ho \omega$	$< 5.4 \times 10^{-4}$	CL=90%
Г ₂₆₇	$\gamma ho\phi$	$< 8.8 \times 10^{-5}$	CL=90%
Г ₂₆₈	$\gamma\omega\omega$	(1.61 \pm 0.33) $ imes$ 10 $^{-3}$	
Г ₂₆₉	$\gamma \phi \phi$	(4.0 \pm 1.2) $ imes$ 10 ⁻⁴	S=2.1
Γ ₂₇₀	$\gamma \eta (1405/1475) ightarrow \ \gamma K \overline{K} \pi$	(2.8 \pm 0.6) $ imes$ 10 ⁻³	S=1.6
Γ ₂₇₁	$\gamma \eta (1405/1475) ightarrow \gamma \gamma ho^0$	(7.8 \pm 2.0) $ imes$ 10 $^{-5}$	S=1.8
Γ ₂₇₂	$\gamma \eta$ (1405/1475) $\rightarrow \gamma \eta \pi^+ \pi^-$	(3.0 \pm 0.5) $ imes$ 10 ⁻⁴	
Γ ₂₇₃	$\gamma \eta (1405/1475) \rightarrow \gamma \rho^0 \rho^0$	(1.7 \pm 0.4) $ imes$ 10 ⁻³	S=1.3
Γ ₂₇₄	$\gamma \eta (1405/1475) \rightarrow \gamma \gamma \phi$	$< 8.2 \times 10^{-5}$	CL=95%
Γ_{275}	$\gamma \eta$ (1405) $\rightarrow \gamma \gamma \gamma \gamma$	$< 2.63 \times 10^{-6}$	CL=90%
Γ ₂₇₆	$\gamma \eta (1475) \rightarrow \gamma \gamma \gamma \gamma$	$< 1.86 \times 10^{-6}$	CL=90%
Γ ₂₇₇	$\gamma \eta (1760) \rightarrow \gamma \rho^0 \rho^0$	(1.3 \pm 0.9) $ imes$ 10 ⁻⁴	
Γ ₂₇₈	$\gamma \eta(1760) \rightarrow \gamma \omega \omega$	(1.98 \pm 0.33) $ imes$ 10 ⁻³	
Γ ₂₇₉	$\gamma \eta (1760) \rightarrow \gamma \gamma \gamma \gamma$	$< 4.80 \times 10^{-6}$	CL=90%
Г ₂₈₀	$\gamma \eta$ (2225)	(3.14 $\substack{+\\-}$ 0.50) $ imes$ 10 $^{-4}$	
Г ₂₈₁	$\gamma f_2(1270)$	(1.63 \pm 0.12) $\times10^{-3}$	S=1.3
Г ₂₈₂	$\gamma {\it f_2(1270)} ightarrow \gamma {\it K_S^0} {\it K_S^0}$	(2.58 $\stackrel{+}{_{-}} \stackrel{0.60}{_{0.22}}$) $ imes$ 10 $^{-5}$	
Г ₂₈₃	$\gamma f_1(1285)$	$(6.1 \pm 0.8) \times 10^{-4}$	
Г ₂₈₄	$\gamma f_0(1370) \rightarrow \gamma \pi \pi$		
Γ ₂₈₅	$\gamma f_0(1370) \rightarrow \gamma K \overline{K}$	(4.2 \pm 1.5) $ imes$ 10 ⁻⁴	
Γ ₂₈₆	$\gamma f_0(1370) \rightarrow \gamma K^0_S K^0_S$	(1.1 \pm 0.4) $ imes$ 10 $^{-5}$	
Γ ₂₈₇	$\gamma f_0(1370) \rightarrow \gamma \eta \eta$		
Γ ₂₈₈	$\gamma f_0(1370) \rightarrow \gamma \eta \eta'$		
Γ ₂₈₉	$\gamma f_1(1420) \rightarrow \gamma K \overline{K} \pi$	(7.9 \pm 1.3) $ imes$ 10 ⁻⁴	
Γ ₂₉₀	$\gamma f_0(1500) \rightarrow \gamma \pi \pi$	$(1.09 \pm 0.24) \times 10^{-4}$	
Γ ₂₉₁	$\gamma f_0(1500) \rightarrow \gamma \eta \eta$	$(1.7 + 0.6) \times 10^{-5}$	
	$\alpha(f_{c}(1500) \rightarrow \alpha K^{0} K^{0})$	$(150 + 0.24) \times 10^{-5}$	
י 292 ר	$\gamma_{I0}(1500) \rightarrow \gamma_{I} \gamma_{S} \gamma_{S}$	$(1.59 - 0.60) \times 10^{-5}$	
¹ 293 Гали	$\gamma \eta_0(1500) \rightarrow \gamma \eta \eta^{-1}$	$(45 \pm 12) \times 10^{-4}$	
י 294	$\gamma \eta (1010) \rightarrow \gamma \eta \pi + \pi$	$(4.3 \pm 1.2) \times 10^{-1}$	

Г ₂₉₅	$\gamma f'_{2}(1525)$		(5.7	$^{+\ \ 0.8}_{-\ \ 0.5}$	$) imes 10^{-4}$	S=1.5
Г ₂₉₆	$\gamma f_2'(1525) \rightarrow \gamma K_S^0 F$	K_{S}^{0}	(8.0	$^+$ 0.7 $^-$ 0.5	$) imes 10^{-5}$	
Γ ₂₉₇	$\gamma f_2'(1525) \rightarrow \gamma \eta \eta$		(3.4	\pm 1.4	$) imes 10^{-5}$	
Γ ₂₉₈	$\gamma f_2(1565) \rightarrow \gamma \eta \eta'$					
Γ ₂₉₉	$\gamma f_2(1640) \rightarrow \gamma \omega \omega$		(2.8	\pm 1.8	$) \times 10^{-4}$	
Γ ₃₀₀	$\gamma f_0(1710) \rightarrow \gamma \pi \pi$		(3.8	\pm 0.5	$) \times 10^{-4}$	
Γ ₃₀₁	$\gamma f_0(1710) \rightarrow \gamma K \overline{K}$		(9.5	$^{+}$ 1.0 $^{-}$ 0.5	$) \times 10^{-4}$	S=1.5
Г ₃₀₂	$\gamma f_0(1710) \rightarrow \gamma \omega \omega$		(3.1	\pm 1.0	$) \times 10^{-4}$	
Г ₃₀₃	$\gamma f_0(1710) \rightarrow \gamma \eta \eta$		(2.4	$^+$ 1.2 $^-$ 0.7	$) \times 10^{-4}$	
Г ₃₀₄	$\gamma f_0(1710) \rightarrow \gamma \eta \eta'$					
Γ ₃₀₅	$\gamma f_0(1710) \rightarrow \gamma \omega \phi$		(2.5	\pm 0.6	$) \times 10^{-4}$	
Г ₃₀₆	$\gamma f_0(1770) \rightarrow \gamma K^0_S K^0_S$		(1.11	$+ 0.20 \\ - 0.33$	$) \times 10^{-5}$	
Г ₃₀₇	$\gamma f_2(1810) \rightarrow \gamma \eta \eta$		(5.4	$^+$ 3.5 $^-$ 2.4	$) imes 10^{-5}$	
Г ₃₀₈	$\gamma \eta_1$ (1855) $\rightarrow \gamma \eta \eta'$		(2.7	$^+$ 0.4 $^-$ 0.5	$) imes 10^{-6}$	
Γ ₃₀₉	$\gamma f_0(1770) \rightarrow \gamma \eta \eta'$					
Γ ₃₁₀	$\gamma f_2(1910) \rightarrow \gamma \omega \omega$		(2.0	\pm 1.4	$) imes 10^{-4}$	
Γ ₃₁₁	$\gamma f_2(1950) \rightarrow$		(7.0	\pm 2.2	$) \times 10^{-4}$	
_	$\gamma K^*(892) K^*(892)$					
Γ ₃₁₂	$\gamma f_2(2010) \rightarrow \gamma \eta \eta'$					
I 313	$\gamma f_0(2020) \rightarrow \gamma \pi \pi$					
I 314	$\gamma f_0(2020) \rightarrow \gamma K K$					
I 315	$\gamma f_0(2020) \rightarrow \gamma \eta \eta$			L 0.22		
Г ₃₁₆	$\gamma f_0(2020) \rightarrow \gamma \eta' \eta'$		(2.63	+ 0.32 - 0.50) × 10 ⁻⁴	
Γ ₃₁₇	$\gamma f_0(2020) \rightarrow \gamma \eta \eta'$					
Г ₃₁₈	$\gamma f_4(2050)$		(2.7	\pm 0.7	$) \times 10^{-3}$	
Г ₃₁₉	$\gamma f_4(2050) \rightarrow \gamma \eta \eta'$					
Г ₃₂₀	$\gamma f_0(2100) \rightarrow \gamma \eta \eta$		(1.13	$+ 0.60 \\ - 0.30$	$) \times 10^{-4}$	
Γ ₃₂₁	$\gamma f_0(2100) \rightarrow \gamma K \overline{K}$					
Γ ₃₂₂	$\gamma f_0(2100) \rightarrow \gamma \pi \pi$		(6.2	\pm 1.0	$) imes 10^{-4}$	
Γ ₃₂₃	$\gamma f_0(2200)$		seen			
Г ₃₂₄	$\gamma f_0(2200) \rightarrow \gamma K K$		(5.9	\pm 1.3	$) \times 10^{-4}$	
Г ₃₂₅	$\gamma f_0(2200) \rightarrow \gamma K^0_S K$	0 <i>S</i>	(2.72	$+ 0.19 \\ - 0.50$	$) \times 10^{-4}$	
Γ ₃₂₆	$\gamma f_0(2200) \rightarrow \gamma \pi \pi$					
Γ ₃₂₇	$\gamma f_0(2200) \rightarrow \gamma \eta \eta$					
Γ ₃₂₈	$\gamma f_J(2220)$		seen		-	
Γ ₃₂₉	$\gamma f_J(2220) \rightarrow \gamma \pi \pi$		< 3.9		$\times 10^{-5}$	CL=90%
Γ ₃₃₀	$\gamma f_J(2220) \rightarrow \gamma K K$		< 4.1		$\times 10^{-5}$	CL=90%
I ₃₃₁	$\gamma t_J(2220) \rightarrow \gamma p \overline{p}$		(1.5	\pm 0.8) × 10 ⁻⁵	
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F	0 + -	Dalitz decays		>	
I 354	$\gamma A^{\flat} \rightarrow \gamma \mu + \mu$	[t] < 7.8		$\times 10^{-7}$	CL=90%
l ₃₅₃	$\gamma A^{\circ} \rightarrow \gamma$ invisible	[e] < 1.7		$\times 10^{-6}$	CL=90%
Γ ₃₅₂	$\gamma \Lambda \Lambda$	< 1.3		$\times 10^{-4}$	CL=90%
Г ₃₅₁	$\gamma p \overline{p} \pi^+ \pi^-$	< 7.9		$\times 10^{-4}$	CL=90%
Γ ₃₅₀	$\gamma p \overline{p}$	(3.8	\pm 1.0	$) imes 10^{-4}$	
Γ ₃₄₉	$\gamma X(2370) \rightarrow \gamma \eta \eta \eta \eta'$	< 9.2		$\times 10^{-6}$	CL=90%
Γ ₃₄₈	$\gamma X(2370) \rightarrow \gamma K^0_S K^0_S \eta'$	(1.2	\pm 0.5) × 10 ⁻⁵	
Γ347	$\gamma X(2370) \rightarrow \gamma K^+ K^- \eta^0$	(1.8	± 0.7) × 10 ⁻⁵	
Г ₃₄₆	$\gamma X(1835) \rightarrow \gamma 3(\pi^+\pi^-)$	(2.4	+ 0.7 - 0.8	$) imes 10^{-5}$	
Г ₃₄₅	$\gamma X(1835) \rightarrow \gamma \gamma \gamma \gamma$	< 3.56		imes 10 ⁻⁶	CL=90%
Г ₃₄₄	$\gamma X(1835) \rightarrow \gamma \gamma \phi(1020)$)			
Г ₃₄₃	$\gamma X(1835) \rightarrow \gamma K^0_S K^0_S \eta$	(3.3	$^{+}$ 2.0 $^{-}$ 1.3	$) imes 10^{-5}$	
Г ₃₄₂	$\gamma X(1835) \rightarrow \gamma p \overline{p}$	(7.7	$^+$ 1.5 $^-$ 0.9	$) imes 10^{-5}$	
Г ₃₄₁	$\gamma X(1835) \rightarrow \gamma \pi^+ \pi^- \eta'$	(2.7	$^{+\ 0.6}_{-\ 0.8}$	$) imes 10^{-4}$	S=1.6
Г ₃₄₀	$\gamma f_0(2470) \rightarrow \gamma \eta' \eta'$	(8.2	$^{+}$ 4.0 $^{-}$ 2.8) × 10 ⁻⁷	
Г ₃₃₉	$\gamma f_2(2340) \rightarrow \gamma \eta' \eta'$	(8.7	$^{+\ \ 0.9}_{-\ \ 1.8}$	$) \times 10^{-6}$	
Г ₃₃₈	$\gamma f_2(2340) \rightarrow \gamma K^0_S K^0_S$	(5.5	$^{+}$ 4.0 $^{-}$ 1.5	$) imes 10^{-5}$	
Г ₃₃₇	$\gamma f_2(2340) \rightarrow \gamma \eta \eta$	(5.6	$^+$ 2.4 $^-$ 2.2	$) imes 10^{-5}$	
Г ₃₃₆	$\gamma f_0(2330) \rightarrow \gamma \eta \eta'$				
Г ₃₃₅	$\gamma f_0(2330) \rightarrow \gamma \eta' \eta'$	(6.1	$\begin{array}{r}+ 4.0\\- 1.8\end{array}$	$) imes 10^{-6}$	
Г ₃₃₄	$\gamma f_0(2330) \rightarrow \gamma \eta \eta$				
Г ₃₃₃	$\gamma f_0(2330) \rightarrow \gamma \pi \pi$				
Г ₃₃₂	$\gamma f_0(2330) \rightarrow \gamma K^0_S K^0_S$	(4.9	\pm 0.7	$) imes 10^{-5}$	

Γ ₃₅₅	$\pi^0 e^+ e^-$	(7.6 ± 1.4)	$) \times 10^{-7}$	
Г ₃₅₆	$\eta e^+ e^-$	(1.42 ± 0.08)	$) imes 10^{-5}$	
Г ₃₅₇	$\eta'(958) e^+ e^-$	($6.59~\pm~0.18$)	$) imes 10^{-5}$	
Г ₃₅₈	$X(1835)e^+e^-, X \to \pi^+\pi^-\eta'$	(3.58 ± 0.25)	$) imes 10^{-6}$	
Г ₃₅₉	$X(2120)e^+e^-$, $X ightarrow\pi^+\pi^-\eta^\prime$	(8.2 ± 1.3)	$) imes 10^{-7}$	
Г ₃₆₀	$X(2370) e^+ e^-$, $X \to \pi^+ \pi^- \eta'$	($1.08~\pm~0.17$)	$) imes 10^{-6}$	
Г ₃₆₁	$\eta U ightarrow \eta e^+ e^-$	[g] < 9.11	imes 10 ⁻⁷	CL=90%
Г ₃₆₂	$\eta^{\prime}(958)U ightarrow~\eta^{\prime}(958)e^{+}e^{-}$	[g] < 2.0	imes 10 ⁻⁷	CL=90%
Г ₃₆₃	$\phi e^+ e^-$	< 1.2	imes 10 ⁻⁷	CL=90%

Weak decays		
<	7.1	

$D^-e^+\nu_e$ + c.c.	<	7.1	imes 10 ⁻⁸	CL=90%
$\overline{D}^0 e^+ e^- + \text{c.c.}$	<	8.5	imes 10 ⁻⁸	CL=90%
$D_s^- e^+ \nu_e + \text{c.c.}$	<	1.3	imes 10 ⁻⁶	CL=90%
$D_{s}^{*-}e^{+}\nu_{e}$ + c.c.	<	1.8	imes 10 ⁻⁶	CL=90%
$D^{-}\pi^{+}$ + c.c.	<	7.5	imes 10 ⁻⁵	CL=90%
$\overline{D}^0 \overline{K}^0 + \text{c.c.}$	<	1.7	imes 10 ⁻⁴	CL=90%
$\overline{D}^0 \overline{K}^{*0}$ + c.c.	<	2.5	imes 10 ⁻⁶	CL=90%
$D_{s}^{-}\pi^{+}$ + c.c.	<	1.3	$ imes 10^{-4}$	CL=90%
$D_{s}^{-}\rho^{+}$ + c.c.	<	1.3	imes 10 ⁻⁵	CL=90%
	$\begin{array}{l} D^{-}e^{+}\nu_{e}+\text{ c.c.}\\ \overline{D}^{0}e^{+}e^{-}+\text{ c.c.}\\ D_{s}^{-}e^{+}\nu_{e}+\text{ c.c.}\\ D_{s}^{*-}e^{+}\nu_{e}+\text{ c.c.}\\ \overline{D}^{0}\overline{K}^{0}+\text{ c.c.}\\ \overline{D}^{0}\overline{K}^{*0}+\text{ c.c.}\\ \overline{D}_{s}^{0}\overline{K}^{*0}+\text{ c.c.}\\ D_{s}^{-}\pi^{+}+\text{ c.c.}\\ D_{s}^{-}\rho^{+}+\text{ c.c.} \end{array}$	$\begin{array}{lll} D^- e^+ \nu_e + {\rm c.c.} &< \\ \overline{D}{}^0 e^+ e^- + {\rm c.c.} &< \\ D_s^- e^+ \nu_e + {\rm c.c.} &< \\ D_s^{*-} e^+ \nu_e + {\rm c.c.} &< \\ \overline{D}{}^0 \overline{K}{}^0 + {\rm c.c.} &< \\ \overline{D}{}^0 \overline{K}{}^{*0} + {\rm c.c.} &< \\ D_s^- \pi^+ + {\rm c.c.} &< \\ D_s^- \pi^+ + {\rm c.c.} &< \\ D_s^- \rho^+ + {\rm c.c.} &< \\ \end{array}$	$\begin{array}{lll} D^- e^+ \nu_e + {\rm c.c.} &< 7.1 \\ \overline{D}{}^0 e^+ e^- + {\rm c.c.} &< 8.5 \\ D_s^- e^+ \nu_e + {\rm c.c.} &< 1.3 \\ D_s^{*-} e^+ \nu_e + {\rm c.c.} &< 1.8 \\ D^- \pi^+ + {\rm c.c.} &< 7.5 \\ \overline{D}{}^0 \overline{K}{}^0 + {\rm c.c.} &< 1.7 \\ \overline{D}{}^0 \overline{K}{}^{*0} + {\rm c.c.} &< 2.5 \\ D_s^- \pi^+ + {\rm c.c.} &< 1.3 \\ D_s^- \rho^+ + {\rm c.c.} &< 1.3 \end{array}$	$\begin{array}{llllllllllllllllllllllllllllllllllll$

Charge conjugation (C), Parity (P), Lepton Family number (LF) violating modes

Γ ₃₇₃	$\gamma \gamma$	С	< 2.7	$\times 10^{-7}$	CL=90%
Г ₃₇₄	$\gamma \phi$	С	< 1.4	imes 10 ⁻⁶	CL=90%
Г ₃₇₅	$e^{\pm}\mu^{\mp}$	LF	< 1.6	imes 10 ⁻⁷	CL=90%
Г ₃₇₆	$e^{\pm}\tau^{\mp}$	LF	< 7.5	imes 10 ⁻⁸	CL=90%
Г ₃₇₇	$\mu^{\pm} \tau^{\mp}$	LF	< 2.0	imes 10 ⁻⁶	CL=90%
Г ₃₇₈	$\Lambda_c^+ e^- + c.c.$		< 6.9	imes 10 ⁻⁸	CL=90%
		Other deca	ays		
Γ370	invisible		< 7	imes 10 ⁻⁴	CL=90%

 Γ_{379} invisible

[a] For $E_{\gamma} > 100$ MeV.

- [b] The value is for the sum of the charge states or particle/antiparticle states indicated.
- $[c]~\Theta(1540)$ is a hypothetical pentaquark state of 1.54 ${\rm GeV/c^2}$ mass and a width of less than 25 MeV/ c^2 .
- [d] Includes $p\overline{p}\pi^+\pi^-\gamma$ and excludes $p\overline{p}\eta$, $p\overline{p}\omega$, $p\overline{p}\eta'$.
- [e] For a narrow state A with mass less than 960 MeV.
- [f] For a narrow scalar or pseudoscalar A^0 with mass 0.21–3.0 GeV.
- [g] For a dark photon U with mass between 100 and 2100 MeV.

FIT INFORMATION

A multiparticle fit to $\eta_{c}(1S)$, $J/\psi(1S)$, $\psi(2S)$, $h_{c}(1P)$, and B^{\pm} with the total width, 10 combinations of partial widths obtained from integrated cross section, and 38 branching ratios uses 113 measurements to determine 19 parameters. The overall fit has a $\chi^2 = 184.6$ for 94 degrees of freedom.

$J/\psi(1S)$ PARTIAL WIDTHS

Γ(ha	adrons)					Г1
VALU	E (keV)	DOCUMENT ID		TECN	COMMENT	
81.37 • • •	7 ± 1.36±1.30 ● We do not use the fe	¹ ANASHIN ollowing data for averages	20 , fits,	KEDR limits, e	e ⁺ e ⁻ tc. ● ● ●	
74.1 59 59 50	$\begin{array}{c} \pm & 8.1 \\ \pm 24 \\ \pm 14 \\ \pm 25 \end{array}$	BAI BALDINI BOYARSKI ESPOSITO	95в 75 75 75В	BES FRAG MRK1 FRAM	e ⁺ e ⁻ e ⁺ e ⁻ e ⁺ e ⁻ e ⁺ e ⁻	

 1 Based on the same dataset as ANASHIN 18A and correlated to the values reported there

Γ(e ⁺ e ⁻)						Γ ₅
VALUE (keV)	EVTS	DOCUMENT ID		TECN	COMMENT	
5.53 ± 0.10 OUR A	VERAGE					
$5.550 \pm 0.056 \pm 0.089$		^{1,2} ANASHIN	18A	KEDR	e ⁺ e ⁻	
$5.36 \begin{array}{c} +0.29 \\ -0.28 \end{array}$		³ HSUEH	92	RVUE	See γ mini-revie	W
\bullet \bullet \bullet We do not use	the follow	ving data for avera	ges, fits	s, limits	, etc. ● ● ●	
$5.58 \pm 0.05 \pm 0.08$		⁴ ABLIKIM	16Q	BES3	3.773 $e^+e^- \rightarrow$	$\mu^+\mu^-\gamma$
5.71 ± 0.16	13k	⁵ ADAMS	06A	CLEO	$e^+e^- \rightarrow \mu^+\mu$	$-\gamma$
$5.57\ \pm 0.19$	7.8k	⁵ AUBERT	04	BABR	$e^+e^- \rightarrow \mu^+\mu$	$-\gamma$
$5.14\ \pm 0.39$		BAI	95 B	BES	e^+e^-	
4.72 ± 0.35		ALEXANDER	89	RVUE	See γ mini-revie	W
4.4 ± 0.6		³ BRANDELIK	79 C	DASP	e ⁺ e ⁻	
4.6 ±0.8		⁶ BALDINI	75	FRAG	e ⁺ e ⁻	
4.8 ± 0.6		BOYARSKI	75	MRK1	e ⁺ e ⁻	
4.6 ± 1.0		ESPOSITO	75 B	FRAM	e ⁺ e ⁻	
¹ From the cross se	ctions of	$e^+e^- \rightarrow e^+e^-$	and e^-	$^+e^- \rightarrow$	hadrons near the	e $J/\psi(1S)$
² Based on the sam	e dataset	as ANASHIN 20 a	nd corr	elated t	o the values repo	rted there.
³ From a simultane	ous fit to	$e^+e^-, \mu^+\mu^-, a$	nd had	lronic cł	nannels assuming	$\Gamma(e^+e^-)$
$= \Gamma(\mu^+\mu^-).$						· · ·
⁴ Using $B(J/\psi \rightarrow$	$\mu^{+}\mu^{-}) =$	$=$ (5.973 \pm 0.007 \pm	± 0.037	7)% fro	m ABLIKIM 13R.	
⁵ Calculated by us f	from the r	eported values of	Г(e ⁺ e ⁻	_)×B(µ	$\mu^+\mu^-$) using B(,	$(\mu^{+}\mu^{-}) =$
$(5.93 \pm 0.06)\%$.			I			
⁰ Assuming equal p	artial widt	ths for e^+e^- and	$\mu^+\mu^-$	•		
$\Gamma(\mu^+\mu^-)$						۲ ₇
VALUE (keV)		DOCUMENT I	D	TECN	COMMENT	
\bullet \bullet \bullet We do not use	the follow	ving data for avera	ges, fits	s, limits	, etc. ● ● ●	
5.13 ± 0.52		BAI	95E	B BES	e ⁺ e ⁻	
4.8 ±0.6		BOYARSKI	75	MRK	$(1 e^+e^-)$	
5 ±1		ESPOSITO	75E	3 FRAI	M e ⁺ e ⁻	
$\Gamma(\gamma\gamma)$						Г373
VALUE (eV)	CL%	DOCUMENT I	D	TECN	COMMENT	
<5.4	90	BRANDELI	K 790	DASI	P e ⁺ e ⁻	

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$J/\psi(1S) \Gamma(i)\Gamma(e^+e^-)/\Gamma(total)$

This combination of a partial width with the partial width into $e^+e^$ and with the total width is obtained from the integrated cross section into channel(I) in the e^+e^- annihilation.

$\Gamma(\text{hadrons}) \times \Gamma(e^+ e^-) / \Gamma_{\text{total}}$						
VALUE (keV)	DOCUMENT ID	TECN	COMMENT			
$\bullet \bullet \bullet$ We do not use the following	owing data for average	s, fits, limits,	etc. • • •			
$4.884\!\pm\!0.048\!\pm\!0.078$	^{1,2} ANASHIN	18A KEDR	e^+e^-			
4 ±0.8	³ BALDINI	75 FRAG	e^+e^-			
3.9 ± 0.8	³ ESPOSITO	75B FRAM	e^+e^-			
¹ From the cross sections o	f $e^+e^- ightarrow e^+e^-$ as	nd $e^+e^- ightarrow$	hadrons near t	he $J/\psi(1S)$		

peak. ² Based on the same dataset as ANASHIN 20 and correlated to the values reported there. ³ Data redundant with branching ratios or partial widths above.

$\Gamma(e^+e^-) \times \Gamma(e^+e^-)/\Gamma_{\rm t}$	otal				$\Gamma_5\Gamma_5/\Gamma$
VALUE (eV)	DOCUMENT ID		TECN	COMMENT	
• • • We do not use the follow	ving data for average	es, fits	, limits,	etc. • • •	
333.1± 6.6±4.0	^{1,2} ANASHIN	18A	KEDR	e^+e^-	
$332.3 \pm 6.4 \pm 4.8$	ANASHIN	10	KEDR	3.097 e ⁺ e ⁻ -	$\rightarrow e^+e^-$
350 ± 20	BRANDELIK	79 C	DASP	e^+e^-	
320 ± 70	³ BALDINI	75	FRAG	e^+e^-	
340 ± 90	³ ESPOSITO	75 B	FRAM	e^+e^-	
360 ±100	³ FORD	75	SPEC	e^+e^-	
¹ From the cross sections of peak.	$e^+e^- ightarrow e^+e^-$ a	nd e^+	$e^- \rightarrow$	hadrons near th	e $J/\psi(1S)$

² Based on the same dataset as ANASHIN 20 and correlated to the values reported there.
 ³ Data redundant with branching ratios or partial widths above.

$\Gamma(\mu^+\mu^-) \times \Gamma(e)$	+ <i>e</i> -)/Γ _t	otal			Γ ₇ Γ ₅ /Γ
VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
333 \pm 4 OUR AV	/ERAGE				
$333.4 \pm 2.5 \pm 4.4$		ABLIKIM	16Q	BES3	3.773 $e^+e^- \rightarrow \mu^+\mu^-\gamma$
$331.8 \pm 5.2 \pm 6.3$		ANASHIN	10	KEDR	3.097 $e^+e^- ightarrow \mu^+\mu^-$
$338.4 \pm 5.8 \pm 7.1$	13k	ADAMS	06A	CLEO	$e^+e^- ightarrow \mu^+\mu^-\gamma$
$330.1 \pm 7.7 \pm 7.3$	7.8k	AUBERT	04	BABR	$e^+e^- ightarrow \mu^+\mu^-\gamma$
$\bullet \bullet \bullet$ We do not use	e the follow	ing data for avera	ages, f	fits, limit	ts, etc. ● ● ●
510 ±90		DASP	75	DASP	e ⁺ e ⁻
380 ± 50		¹ ESPOSITO	75 B	FRAM	e ⁺ e ⁻

¹Data redundant with branching ratios or partial widths above.

$\Gamma(\eta\pi^+\pi^-)$ ×	Г(e ⁺ e ⁻),	/Γ _{total}			Г ₁₃ Г ₅ /Г
VALUE (eV)	<u>EVTS</u>	DOCUMENT ID	TECN	COMMENT	
2.3 ± 0.4 OUR A	WERAGE			+ -	+ _
$2.34 \pm 0.43 \pm 0.16 \\ 2.22 \pm 0.96 \pm 0.02$	49 9	LEES ¹ AUBERT	18 BABR 07AU BABR	$e^+e^- ightarrow \eta z$ 10.6 e^+e^- -	$ \begin{array}{ccc} \pi & \pi & \gamma \\ \rightarrow & \eta \pi^+ \pi^- \gamma \end{array} $
¹ AUBERT 07AU	J reports [[$(J/\psi(1S) \rightarrow \eta \pi^+)$	π^{-}) × $\Gamma(J/$	$\psi(1S) ightarrow e^+ e^+$	$e^{-})/\Gamma_{total}] \times$
$[B(\eta ightarrow \pi^+ \pi) = \pi^+ \pi^- \pi^0) =$ second error is	$(23.02 \pm 0.1)^{-1}$ (23.02 ± 0.1) the system	$51 \pm 0.22 \pm 0.03$ e 25) $\times 10^{-2}$. Our f atic error from usi	eV which we d first error is th ng our best va	ivide by our bes eir experiment' ilue.	it value $B(\eta o$ s error and our
$\Gamma(\eta\pi^+\pi^-\pi^0)$	× Г(е+е	⁻)/Γ _{total}			$\Gamma_{15}\Gamma_5/\Gamma$
VALUE (eV)	EVTS	DOCUMENT ID	TECN CO	DMMENT	
64.8±11.1±0.4	200	¹ LEES 21	lc BABR e⁻	$+ e^- \rightarrow \gamma_{ISR}$	$e^{(\pi^+\pi^-4\pi^0)}$
1 LEES 21C rep [B($\eta ightarrow 3\pi^0$) = (32.57 \pm 0.2 is the systema	orts $[\Gamma(J/\psi)] = 21.1 \pm 21) \times 10^{-2}$. tic error from	$(1S) \rightarrow \eta \pi^+ \pi^-$ 1.7 \pm 3.2 eV whic Our first error is t m using our best v	π^{0} × $\Gamma(J/T)$ h we divide by their experimen- value.	$\psi(1S) ightarrow e^+ e^+ e^+ e^+ e^+ e^+ e^+ e^+ e^+ e^+$	$(e^{-})/\Gamma_{total}] \times e B(\eta ightarrow 3\pi^{0})$ ur second error
$\Gamma(n\pi^+\pi^-3\pi^0)$	$\times \Gamma(e^+)$	e [−])/Γ _{total}			Γι6Γ5/Γ
VALUE (eV)	EVTS	DOCUMENT ID	TECN COM	MENT	10 37
26.9±5.7±0.1	101	¹ LEES 21C	BABR e^+e	$- \rightarrow \gamma_{ISB}(\pi$	$+\pi^{-}3\pi^{0}\gamma\gamma)$
${1\atop [{\sf B}(\eta o 2\gamma)]}$ LEES 21C repo $[{\sf B}(\eta o 2\gamma)]$ (39.36 \pm 0.18 is the systema	orts $[\Gamma(J/\psi)]$ = 10.6 ± 1) × 10 ⁻² . (tic error from	$(1S) \rightarrow \eta \pi^+ \pi^-$ $(1S) \rightarrow \eta \pi^-$	$(3\pi^0) \times \Gamma(J/$ we divide by neir experiment value.	$\psi(1S) ightarrow e^+$ our best value t's error and ou	$(p^{e^{-}})/\Gamma_{total}] imes B(\eta ightarrow 2\gamma) = 0$ ur second error
$\Gamma(nK^+K^-) \times$	$\Gamma(e^+e^-)$	/F _{total}			Γ10Γ5/Γ
VALUE (eV)	()	DOCUMENT I	ID TECI	COMMENT	19 5/
4.76±1.64±0.03		¹ LEES	23 BAE	$R e^+e^- \rightarrow$	γ_{ISB} hadrons
¹ LEES 23 repo	orts $[\Gamma(1/a)]$	$(15) \rightarrow nK^+K^-$	-) × Γ(1/η	$v(1S) \rightarrow e^+ e^+$	$(-1)/\Gamma$
$[{ m B}(\eta ightarrow3\pi^0)]=(32.57\pm0.2)$ is the systema	$ =1.55\pm 0$ 21) $ imes 10^{-2}$. tic error from	0.51 ± 0.16 eV which our first error is to musing our best v	ch we divide b heir experiment value.	y our best value nt's error and o	$e B(\eta \rightarrow 3\pi^0)$ ur second error
$\Gamma(\eta K^{\pm} K^0_S \pi^{\mp})$	× Г(е+	e ⁻)/Γ _{total}			Г ₂₀ Г ₅ /Г
VALUE (eV)	EVIS	DOCUMENT ID	TECN		$0+ \pm 0$
7.3±1.4±0.4	44	LEES	17D BABR	$e^+e^- \rightarrow K$	$S^{K^{\pm}\pi^{\mp}\pi^{0}\gamma}$
$\Gamma(K^{0}_{S}K^{\pm}\pi^{\mp}\rho($	770) ⁰) ×	$\Gamma(e^+e^-)/\Gamma_{tot}$	al ID TECI		Г ₁₉₆ Г ₅ /Г
$17.3 \pm 2.1 \pm 1.7$		LEES	23 BAE	$\frac{comment}{R} e^+ e^- \rightarrow$	γ_{ICD} hadrons
$\Gamma(o^{\pm}\pi^{\mp}\pi^{+}\pi^{-}$	2π ⁰) × г			,	
VALUE (eV)	EVTS	DOCUMENT ID	TECN CON	1MENT	- 23. 3/ -
155±26±36	14k	LEES 21	BABR 10.6	$b e^+e^- \rightarrow 2(e^+e^-)$	$\pi^+\pi^-$) $3\pi^0\gamma$

$\Gamma(\rho^+\rho^-\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi$	^{.0}) × Γ(<i>e</i>	$(e^+e^-)/\Gamma_{total}$	TECN	COMMENT	Γ ₂₄ Γ ₅ /Γ
32±13±15	14k	LEES 2	1 BABR	$10.6 e^+e^-$	$\rightarrow 2(\pi^+\pi^-)3\pi^0\gamma$
$\frac{\Gamma(\rho^{\mp}K^{\pm}K^{0}_{S}) \times V^{ALUE (eV)}}{10.4 \pm 1.0 \pm 1.9}$	$\frac{\Gamma(e^+e^-)}{\frac{EVTS}{130}}$)/ F_{total <u>DOCUMENT</u> LEES}	170 B	<u>ECN</u> <u>COMMEI</u> ABR e ⁺ e ⁻	$\Gamma_{26}\Gamma_{5}/\Gamma$ $\xrightarrow{NT} \qquad \qquad$
$\Gamma(\omega \pi^+ \pi^-) \times \Gamma$	(e ⁺ e ⁻)/	F _{total}	<u>D T</u>	ECN <u>COMME</u>	Γ ₄₁ Γ ₅ /Γ
53.6±5.0±0.4 ¹ AUBERT 07AU \times [B(ω (782) \rightarrow B(ω (782) \rightarrow π error and our set	788 reports [$\Gamma(., \pi + \pi - \pi^0)$ $(\pi + \pi^- \pi^0) =$ cond error i	¹ AUBERT $J/\psi(1S) \rightarrow \alpha$ $J/\psi(1S) \rightarrow \alpha$ J/ψ	07AU B $(\pi^+\pi^-)$ $(\pi^+\pi^-)$ $(\pi^+\pi^+)$ $(\pi^+\pi^-)$ $(\pi^+\pi^+)$ $($	ABR 10.6 e^+ × $\Gamma(J/\psi(1S))$ ' which we divide Our first error m using our be	$e^- e^- \rightarrow \omega \pi^+ \pi^- \gamma$ $\rightarrow e^+ e^-) / \Gamma_{total}$ ide by our best value is their experiment's set value.
$\frac{\Gamma(\omega \pi^{0} \pi^{0}) \times \Gamma(\omega)}{VALUE(eV)}$	(е+е-)/Г <u>_{EVTS}</u>	total <u>DOCUMENT ID</u>	<u>TEC</u>	<u>CN</u> <u>COMMENT</u>	Γ ₄₂ Γ ₅ /Γ
27.8±3.5±0.2 ¹ LEES 18E repo $[B(\omega(782) \rightarrow \pi)$ $B(\omega(782) \rightarrow \pi)$ error and our se	398 rts [$\Gamma(J/\psi(\pi^+\pi^-\pi^0)]$] $+\pi^-\pi^0$) = cond error i	LEES $(1S) \rightarrow \omega \pi^0$ $= 24.8 \pm 1.8$ $= (89.2 \pm 0.7)$ s the systemat	18E BA π^{0}) × Γ \pm 2.5 eV × 10 ⁻² . (ic error from	BR $10.6 \ e^+ e^-$ $(J/\psi(1S) \rightarrow$ which we divide Dur first error m using our be	$e^- \rightarrow \pi^+ \pi^- 3\pi^0 \gamma$ $e^+ e^-) / \Gamma_{total} \times \gamma$ de by our best value is their experiment's est value.
$\Gamma(\omega 3\pi^0) \times \Gamma(e^{1})$	+ e ⁻)/Γ _{to}	btal DOCUMENT ID	TECN	COMMENT	Γ ₄₃ Γ ₅ /Γ
10.5±3.1±0.1 ¹ LEES 21C report $[B(\omega(782) \rightarrow \pi)]$ $B(\omega(782) \rightarrow \pi)]$ error and our set	89 1 orts $[\Gamma(J/\psi, \pi^+\pi^-\pi^0)]$ $(\pi^+\pi^-\pi^0) =$ cond error i	LEES $(1S) ightarrow \omega 3\pi$ $= 9.4 \pm 2.3$ $= (89.2 \pm 0.7)$ is the systemat	$\begin{array}{c c} 21c & \text{BAB} \\ \hline 10^{0} & \times & \Gamma \\ \pm & 1.5 & \text{eV} \\ \times & 10^{-2}. \\ \text{ic error from} \end{array}$	${\sf R}$ $e^+e^- ightarrow$ $(J/\psi(1S) ightarrow$ which we divic Dur first error m using our be	$\frac{\gamma_{ISR}(\pi^+\pi^-4\pi^0)}{e^+e^-)/\Gamma_{\text{total}}] \times \\ \text{de by our best value} \\ \text{is their experiment's est value.} \\$
$\frac{\Gamma(\omega\pi^+\pi^-\pi^0)}{\frac{VALUE (10^{-2} \text{ keV})}{2}}$	к Г(е ⁺ е ⁻	-)/Γ_{total} DOCUMENT ID	TECI	<u>COMMENT</u>	Г ₄₆ Г ₅ /Г
2.2 \pm 0.3 \pm 0.2 $\Gamma(\omega\eta) \times \Gamma(e^+e^+)$	170 . e ⁻)/Γ _{total}	AUBERT OCUMENT ID	06D BAE	BR 10.6 e ⁺ e ⁻	$^{-} \rightarrow \omega \pi^{+} \pi^{-} \pi^{0} \gamma$ $\Gamma_{45}\Gamma_{5}/\Gamma$
16.9±7.6±0.2 ¹ Different final s $\Gamma(J/\psi(1S) \rightarrow \psi)$ 2.1±0.7 eV wh $B(\omega(782) \rightarrow \pi)$	state as in $e^+e^-)/\Gamma_{tc}$ ich we divid $+\pi^-\pi^0) =$	EES AUBERT 06. $_{\rm otal}$] × [B(η \rightarrow le by our best v = (89.2 \pm 0.7)	21C BABF LEES 21C $3\pi^0$] × [values B(η × 10 ⁻²	$\frac{1}{e^+e^-} \rightarrow \frac{1}{e^+e^-} \rightarrow \frac{1}$	$\overline{\gamma_{ISR}(\pi^+\pi^-4\pi^0)}$ $/\psi(1S) \rightarrow \omega \eta) \times \pi^+\pi^-\pi^0)] = 4.9 \pm 2.57 \pm 0.21) \times 10^{-2},$ is their experiment's

error and our second error is the systematic error from using our best values.

$\Gamma(\omega \pi^{0} \eta) \times \Gamma(e^{+}e^{-})/\Gamma_{\text{total}}$	Г ₄₇ Г ₅ /Г
VALUE (eV) EVTS DOCUMENT ID TECN COMMENT	
1.90±0.96±0.01 27 ¹ LEES 18E BABR 10.6 $e^+e^- \rightarrow \pi^+\pi$	$-\pi^0\pi^0\eta\gamma$
¹ LEES 18E reports $[\Gamma(J/\psi(1S) \rightarrow \omega \pi^0 \eta) \times \Gamma(J/\psi(1S) \rightarrow e^+ e^- B(\omega(782) \rightarrow \pi^+ \pi^- \pi^0)] = 1.7 \pm 0.8 \pm 0.3$ eV which we divide by ou $B(\omega(782) \rightarrow \pi^+ \pi^- \pi^0) = (89.2 \pm 0.7) \times 10^{-2}$. Our first error is their error and our second error is the systematic error from using our best value)/F _{total}] × r best value experiment's
$\Gamma(\omega \pi^{+} \pi^{-} 2\pi^{0}) \times \Gamma(e^{+} e^{-}) / \Gamma_{\text{total}}$ VALUE (eV) EVTS DOCUMENT ID TECN COMMENT	Г ₄₉ Г ₅ /Г
185±30±1 14k 1 LEES 21 BABR 10.6 $e^+e^- \rightarrow 2(\pi^+)$	π^{-}) $3\pi^{0}\gamma$
¹ LEES 21 reports $[\Gamma(J/\psi(1S) \rightarrow \omega \pi^+ \pi^- 2\pi^0) \times \Gamma(J/\psi(1S) \rightarrow e^+)]$	$e^{-})/\Gamma_{total}$
× $[B(\omega(782) \rightarrow \pi^+\pi^-\pi^0)] = 165 \pm 9 \pm 25$ eV which we divide by ou	r best value
$B(\omega(782) \rightarrow \pi^+ \pi^- \pi^0) = (89.2 \pm 0.7) \times 10^{-2}$. Our first error is their error and our second error is the systematic error from using our best value.	experiment's
$\Gamma(\omega K \overline{K}) \times \Gamma(e^+ e^-) / \Gamma_{\text{total}}$	Г ₆₀ Г ₅ /Г
3.70+1.98+0.03 24 ¹ AUBERT 07AU BABR 10.6 $e^+e^- \rightarrow 0$	$\kappa^+ \kappa^- \gamma$
¹ AUBERT 07AU reports $[\Gamma(1/\psi(1S) \rightarrow \psi K\overline{K}) \times \Gamma(1/\psi(1S) \rightarrow e^+e^-)$)/E] ×
$[B(\omega(782) \rightarrow \pi^+\pi^-\pi^0)] = 3.3 \pm 1.3 \pm 1.2 \text{ eV}$ which we divide by ou	r best value
$B(\omega(782) \rightarrow \pi^+\pi^-\pi^0) = (89.2 \pm 0.7) \times 10^{-2}$. Our first error is their e	experiment's
error and our second error is the systematic error from using our best value	
$\frac{\Gamma(K^+ K^*(892)^- + \text{c.c.}) \times \Gamma(e^+ e^-)}{\Gamma_{\text{total}}}$	Г ₆₉ Г ₅ /Г
29.0±1.7±1.3 AUBERT 08S BABR $10.6 e^+e^- \rightarrow K^+ K$	$(892)^-\gamma$
$\Gamma(K^+K^*(892)^- + \text{c.c.} \rightarrow K^+K^-\pi^0) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$	Γ ₇₀ Γ ₅ /Γ
VALUE (eV) EVTS DOCUMENT ID TECN COMMENT	
10.96±0.85±0.70 155 AUBERT 088 BABR 10.6 $e^+e^- \rightarrow h$	$\kappa^+ \kappa^- \pi^0 \gamma$
$\Gamma(K^+K^*(802)^- + cc \rightarrow K^0K^\pm \pi^\mp + cc) \times \Gamma(e^+e^-)/\Gamma$	
VALUE (eV) = VTS DOCUMENT ID TECH COMMENT	'/1'5/'
16.76±1.70±1.00 89 AUBERT 08S BABR 10.6 $e^+e^- \rightarrow h$	$K^0_S K^{\pm} \pi^{\mp} \gamma$
$\Gamma(K^0\overline{K}^*(892)^0 + \text{c.c.}) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$	Г72 Г 5/Г
VALUE (eV) DOCUMENT ID TECN COMMENT	12: 57
26.6±2.5±1.5 AUBERT 08S BABR 10.6 $e^+e^- \to K^0$	$\overline{\kappa}^*(892)^0\gamma$
$\Gamma(K^{0}\overline{K}^{*}(892)^{0} + \text{c.c.} \rightarrow K^{0}K^{\pm}\pi^{\mp} + \text{c.c.}) \times \Gamma(e^{+}e^{-})/\Gamma_{\text{total}}$	Г ₇₃ Г ₅ /Г
VALUE (eV) EVTS DOCUMENT ID TECN COMMENT	
17.70±1.70±1.00 94 AUBERT 08S BABR 10.6 $e^+e^- \rightarrow h$	$K^0_S K^{\pm} \pi^{\mp} \gamma$
$\Gamma(\overline{K}^*(892)^0 K^+ \pi^- + \text{c.c.}) \times \Gamma(e^+ e^-) / \Gamma_{\text{total}}$	Г ₇₄ Г ₅ /Г
VALUE (eV) EVTS DOCUMENT ID TECN COMMENT	
42.6±4.8±7.2 99 ¹ LEES 17D BABR $e^+e^- \rightarrow \kappa_S^0 h$	$K^{\pm}\pi^{\mp}\pi^{0}\gamma$
¹ Dividing by 1/6 to account for B($\mathcal{K}^*(892)^0 \rightarrow \mathcal{K}^0_S \pi^0$)=1/6.	

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Г(<i>K</i> *(892) [±] <i>K</i> ∓	π ⁰) × Γ	$(e^+e^-)/\Gamma_{\text{total}}$	l		Г ₇₅ Г ₅ /Г
VALUE (eV)	EVTS	DOCUMENT ID	TECN	COMMENT	
22.8±2.8±6.8	80	¹ LEES	17D BABR	$e^+e^- \rightarrow K_S^0$	$K^{\pm}\pi^{\mp}\pi^{0}\gamma$
1 Dividing by 1/4	to accour	t for B(<i>K</i> *(892) ^Ξ	$^{\pm} \rightarrow \ \kappa_S^0 \pi^{\pm})$	= 1/4.	
$\Gamma(K^*(892)^+K_S^0)$	π^{-} + c.c.	$() \times \Gamma(e^+e^-)$	/Γ _{total}		Г ₇₆ Г ₅ /Г
VALUE (eV)	<u>EVTS</u>	DOCUMENT ID	TECN	COMMENT	
11.0 ± 2.8 OUR AVI	ERAGE 64	1 _{1FFS}	17D RARR	$e^+e^- \rightarrow \kappa^0$	$\kappa^{\pm}\pi^{\mp}\pi^{0}$
$14.8 \pm 4.8 \pm 1.2$	53	² LEES	14H BABR	$e^+e^- \rightarrow \pi^+$	$\pi^- \kappa_0^0 \kappa_0^0 \gamma$
1 Dividing by $1/2$	to take in	to account R(K*	(802)± × K	$\pm \pi \mp 1/2$	5.57
² Dividing by $1/2$	to take in	to account $B(K^*)$	$(892) \rightarrow K^{0}_{S7}$ $(892) \rightarrow K^{0}_{S7}$	$\pi + j = 1/2.$ $\pi = 1/4.$	
Г(<i>K</i> *(892) ⁺ К ₅	π^- + c.c.	$\rightarrow K^0_S K^0_S \pi^+$	$\pi^{-}) \times \Gamma(e^{+})$	⁻ e ⁻)/Γ _{total}	Γ ₇₇ Γ ₅ /Γ
VALUE (eV)	EVTS	DOCUMENT ID	TECN	COMMENT	
3.7±1.2±0.3	53	LEES	14H BABR	$e^+e^- \rightarrow \pi^+$	$\pi^- \kappa^0_S \kappa^0_S \gamma$
$\Gamma(K^*(892)^0 K_S^0 \eta$	r ⁰) × ($(e^+e^-)/\Gamma_{total}$			Г ₈₀ Г ₅ /Г
VALUE (eV)	EVTS	DOCUMENT ID	TECN	COMMENT	
$3.60 \pm 0.75 \pm 2.25$	34	¹ LEES	17D BABR	$e^+e^- \rightarrow K_S^0$	$K^{\pm}\pi^{+}\pi^{0}\gamma$
1 Dividing by 2/3	to accour	it for B(<i>K</i> *(892) ⁽	$\to K^+\pi^-)$	= 2/3.	
Γ(K*(892)⁰ K *(8)	892) ⁰) ×	COCUMENT ID	otal TECN COMI	MENT	Г ₈₂ Г ₅ /Г
$1.28 \pm 0.34 \pm 0.07$ 4	7 ± 12	LEES 12F	BABR 10.6	$e^+e^- \rightarrow \pi^+\pi$	$\tau^- K^+ K^- \gamma$
	$rac{1}{2}$			$a^+a^ a^-a^+a^+a^+a^+a^+a^+a^+a^+a^+a^+a^+a^+a^+a$	$-\nu + \nu - \omega$
$1.28 \pm 0.40 \pm 0.11$ 2 ¹ Dividing by (2/3)	$(25 \pm 6)^2$ to take	twice into accour	That B(K^{*0}	$e^+e^- \rightarrow \pi^+ \pi^-$ $\rightarrow K^+\pi^-) = 2$	$1 \times 1^{\circ} \times 1^{\circ} \rightarrow 1^{\circ}$
$K\pi$).			,	,	
- Superseded by I	_EES 12F.	<i>.</i>			
Γ(K*(892)[±] K*(VALUE (eV)	892)+)	× Г(е ⁺ е ⁻)/Г DOCUMENT ID	total TECN	COMMENT	Г ₈₃ Г ₅ /Г
0.80±0.48±0.32	1 ± 5	¹ LEES	14H BABR	$e^+e^- \rightarrow \pi^+$	$\pi^{-}\kappa^{0}\kappa^{0}\gamma$
1 Dividing by (1/4	4) ² to tak	e twice into accou	unt B(K^* (892)	$\rightarrow \ \kappa^0_S \pi) = 1/2$	/4.
$\Gamma(K_{2}^{*}(1430)^{+}K_{2}^{0})$	$2\pi^{-} + c.$	с.) × Г(<i>e</i> + <i>e</i> -)/Γ _{total}		Г94Г5/Г
VALUE (eV)	EVTS	DOCUMENT ID	TECN	COMMENT	,
20.1±9.8±0.5	35	^{1,2} LEES	14H BABR	$e^+e^- ightarrow \pi^+$	$\pi^- \kappa^0_S \kappa^0_S \gamma$
¹ Dividing by $1/4$	to take i	nto account B(<i>K</i>	$f^*(1430) \rightarrow h$	$(S_{S}^{0}\pi) = 1/4$ B($K^*(1430) ightarrow$
² LEES 14H repor	ts [$\Gammaig(J/\psiig)$	$1S) ightarrow K_2^*(1430)$	$+ \kappa_{S}^{0} \pi^{-} + c.c$	$(L) \times \Gamma(J/\psi(1S))$	$ ightarrow e^+e^-)/$
$\Gamma_{\text{total}}] \times [B(K)]$	$_{2}^{*}(1430) -$	$(K\pi) = 10.0 =$	$\pm 4.8 \pm 0.8 \text{ eV}$ $\times 10^{-2} \text{ Our f}$	which we divid	e by our best
error and our se	cond error	$(+9.9 \pm 1.2)$ is the systematic	error from usi	ng our best valu	e.

$\Gamma(K_2^*(1430)^0 K^-)$	π^+ + c.c. \rightarrow	$K^+K^-\pi^+$	$\pi^{-})/\Gamma_{total}$		Г ₉₃ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT I	<u> </u>	N COMMENT	
$2.65 \pm 0.80 \pm 0.44$	1094	ANASHIN	22 KEI	$\text{DR} \ J/\psi \rightarrow K^+$	$K^{-}\pi^{+}\pi^{-}$
$\Gamma(\overline{K}_{2}^{*}(1430)^{0}K^{*})$	(892) ⁰ + c.c.) × Γ(e ⁺ e ⁻	-)/Γ _{total}		Г ₉₅ Г ₅ /Г
<u>value (ev)</u> 1 25.8±1.4±0.6	710 ^{1,2,3} LEF	ES 12F	BABR 10.6	$e^+e^- \rightarrow \pi^+\pi^-$	$-\kappa^+\kappa^-\gamma$
• • • We do not us	se the following	; data for avera	ges, fits, lim	its, etc. ● ● ●	
$33 \pm 4 \pm 1$	317 ^{2,4} AU	BERT 07AK	BABR 10.6	$e^+e^- \rightarrow \pi^+\pi^-$	$-K^+K^-\gamma$
¹ LEES 12F repo	rts [$\Gamma(J/\psi(1S$	$) \rightarrow \overline{K}_{2}^{*}(143)$	0) ⁰ K*(892)	$^{0}+$ c.c.) \times $\Gamma(.$	$J/\psi(1S)$ $ ightarrow$
$e^+e^-)/\Gamma_{total}]$	$\times [B(K_2^*(143$	$(0) \rightarrow K\pi)]$	$=$ 12.89 \pm 0	$0.54~\pm~0.41$ eV w	/hich we di-
vide by our best their experimen	: value Β(<i>K</i> [*] ₂ (1 t's error and οι	$(430) \rightarrow K\pi)$ In second error	= (49.9 \pm 1 is the system	2) $ imes$ 10 ^{-2} . Our natic error from us	first error is ing our best
value. 2 Dividing by 2/3	to take into a	ccount that B($K^{*0} \rightarrow K^+$	$(\pi^{-}) = 2/3 \ B(K^{*})$	$^{*0} \rightarrow K \pi$).
³ The $K_2^*(1430)$	cannot be disti	nguished from	the $K_0^*(1430)$	$\frac{1}{2}$	
⁴ Superseded by L	EES 12F. AUBI	ERT 07AK repo	rts [$\Gamma(J/\psi(1, \phi))$	$(5) \rightarrow K_2^*(1430)^{\circ}$	K*(892) ⁰ +
c.c.) $\times I(J/\psi)$	$(1S) \rightarrow e^+ e^-$	$)/I_{total} \times [I_{total}]$	$3(K_{2}^{*}(1430))$	$\rightarrow K\pi$] = 16.4 :	$\pm 1.1 \pm 1.4$
ev which we div first error is the using our best v	ide by our best ir experiment's alue.	s error and our	$(430) \rightarrow K \pi$ second erro	$) = (49.9 \pm 1.2) \times$ r is the systematic	c error from
$\Gamma(K_2^*(1430)^-K^*)$	⁶ (892) ⁺ + c.o	$) \times \Gamma(e^+ \epsilon$	e ⁻)/Γ _{total}		Г ₉₆ Г ₅ /Г
VALUE (eV)	<u>EVTS</u>	DOCUMENT ID	TECN	COMMENT	0 0
$18.6 \pm 16.1 \pm 0.4$	8 ± 8 ^{1,2} l	LEES	14H BABR	$e^+e^- \rightarrow \pi^+\pi$	$\tau^{-}K^{0}_{S}K^{0}_{S}\gamma$
¹ Dividing by $(1/4)$ $\kappa_{c}^{0} \pi) = 1/4 \text{ B}$	$(K^*(1430))^2$ to take into	account B(K^*)	$(892) \rightarrow \kappa_S^0$	$\pi(\pi)=1/4$ and B(k	$\kappa^{*}(1430) ightarrow$
2 LEES 14H repo	rts [$\Gamma(J/\psi(1S))$	$) \rightarrow K_{2}^{*}(1430)$)) [—] K*(892)	$^+$ + c.c.) × $\Gamma(.$	$J/\psi(1S) \rightarrow$
$e^+e^-)/\Gamma_{total}$	$\times [B(K_{2}^{*}(143)$	$(0) \rightarrow K\pi)] =$	9.28 ± 8.0	\pm 0.32 eV which v	we divide by
our best value	$B(K_2^*(1430) -$	(49.	$9 \pm 1.2) imes 1$	10^{-2} . Our first ϵ	error is their
experiment's err	or and our seco	ond error is the	systematic e	rror from using our	r best value.
$\Gamma(K_2^*(1430)^- K^*)$ Γ_{total}	(892) ⁺ + c.c	:. → <i>K</i> *(892	$)^{+}K_{S}^{0}\pi^{-}$ -	⊦ c.c.) × Γ(<i>e</i> +	'е [—])/ Г ₉₇ Г ₅ /Г
VALUE (eV)	EVTS I	DOCUMENT ID	TECN	COMMENT	
$2.32{\pm}2.00{\pm}0.08$	8 ± 8 ¹	_EES	14H BABR	$e^+e^- \rightarrow \pi^+\pi$	$\tau^- K^0_S K^0_S \gamma$
1 Dividing by 1/4	to take into a	ccount B(K^* (8	92) $\rightarrow \kappa_S^0$	π) = 1/4.	
$\Gamma(\overline{K}_2(1770)^0 K^*)$	(892) ⁰ + c.c.	→ K*(892)	$^{0}K^{-}\pi^{+}+$	с.с.) × Г(<i>е</i> + <i>е</i>	י [−])/ רמיך /ך
' total					' 99 ' 5/'

VALUE (eV)EVTSDOCUMENT IDTECNCOMMENT**3.8±0.4±0.3**110 ± 141AUBERT07AKBABR10.6 $e^+e^- \rightarrow \pi^+\pi^-K^+K^-\gamma$ 1Dividing by 2/3 to take into account that B($K^{*0} \rightarrow K^+\pi^-$) = 2/3.

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$\Gamma(\phi\pi^+\pi^-)$ × Γ	$(e^+e^-)/\Gamma_t$	otal				Г ₁₀₆ Г ₅ /Г
VALUE (eV)	EVTS	DOCUMENT	ID	TECN	COMMENT	
4.48±0.35 OUR AV 4.46±0.49±0.05	ERAGE 181	¹ LEES	12F	BABR	10.6 $e^+ e^{\kappa^+ \kappa^- \pi}$	$\rightarrow + \pi^{-} \gamma$
$4.51\!\pm\!0.48\!\pm\!0.05$	254 ± 23	² SHEN	09	BELL	$ 10.6 e^+ e^- \\ K^+ K^- \pi $	$_{,+}^{\pi} - \gamma$
• • • We do not us	e the followin	g data for ave	erages, f	its, limi	ts, etc. • • •	
5.3 $\pm 0.7 \pm 0.1$	103	³ AUBERT,I	3E 06D	BABR	10.6 $e^+e^{K^+K^-\pi}$	$\overrightarrow{+}_{\pi^{-}\gamma}$
$[B(\phi(1020) \rightarrow B(\phi(1020) \rightarrow B(\phi(1020) \rightarrow I))]$ error and our sec ² SHEN 09 report $\phi\pi^+\pi^-) \times \Gamma$ $B(\phi(1020) \rightarrow I)$ error and our sec ³ Superseded by $\Gamma(J/\psi(1S) \rightarrow I)$ eV which we div Our first error is from using our b	$[K^{+}K^{-}) = (K^{+}K^{-}) = (K^{$	$\begin{array}{l} 2.19 \pm 0.23 \pm \\ 49.1 \pm 0.5) \times \\ \text{the systematic} \\ 41 \pm 0.26 \text{ e}^{+} \\ e^{+} e^{-})/\Gamma_{\text{tc}} \\ 49.2 \pm 0.6) \times \\ 49.1 \pm 0.5) \times \\ \text{the systematic} \\ \text{UBERT,BE (} \\ \text{c} \\ \text{tal} \\ \end{bmatrix} \times \\ \begin{bmatrix} \mathrm{B}(\phi(1 \\ \text{st value B}(\phi(1 \\ \text{st value B}(\phi(1$	$= 0.07 \text{ e}$ $= 10^{-2}.$ $= \text{error fi}$ $= 10^{-2}.$ $= 10^{-2}.$ $= 10^{-2}.$ $= \text{error fi}$ $= 060 \text{ rep}$ $= 020) \rightarrow$ $= 1020) - \text{and our}$	eV which Our fin rom usir a meas $[B(\phi(100)), \phi(100), \phi(1$	the we divide by a we divide by st error is the surement of $(20) \rightarrow K^+$, we rescale to a our best vant $(J/\psi(1S) \rightarrow K^-)] = 2.61$ $(K^-) = (49.11)$ error is the sum	in experiment's lue. $[\Gamma(J/\psi(1S) \rightarrow K^{-})] \text{ assuming}$ our best value ir experiment's lue. $\phi\pi^{+}\pi^{-}) \times \pm 0.30 \pm 0.18$ $\pm 0.5) \times 10^{-2}.$ systematic error
$\Gamma(\phi \pi^0 \pi^0) \times \Gamma(\phi \pi^0 \pi^0)$	e ⁺ e ⁻)/Γ _{to}	tal CUMENT ID	TEC	N CON	1MENT	Γ ₁₀₇ Γ ₅ /Γ
2.77±0.57±0.03 • • • We do not use	45 ¹ LEE e the followin	ES 12 g data for ave	2F BAE erages, f	BR 10.6 its, limi	$\hat{o} \ e^+ e^- ightarrow h$ ts, etc. • • •	$K^+ K^- \pi^0 \pi^0 \gamma$
$3.13 {\pm} 0.88 {\pm} 0.03$	23 ² AU	BERT,BE 06	D BAE	3R 10.0	$5 e^+e^- \rightarrow I$	$\kappa + \kappa - \pi^0 \pi^0 \gamma$
¹ LEES 12F report $[B(\phi(1020) \rightarrow B(\phi(1020) \rightarrow B(\phi(1020) \rightarrow B(\phi(1020) \rightarrow B)))]$ error and our sets ² Superseded by $\Gamma(J/\psi(1S) \rightarrow B)$ eV which we dive Our first error is from using our b	ts $[\Gamma(J/\psi(15K^+ K^-))] = K^+ K^-) = (K^+ K^-) = (K^+ K^-) = (K^+ K^-) - (K^-) - (K^- K^-) - (K^- K^-$	$(5) \rightarrow \phi \pi^0 \pi$ $1.36 \pm 0.27 \pm$ $49.1 \pm 0.5) \times$ the systematic AUBERT,BE $(3) \times [B(\phi(1))]$ st value $B(\phi(2))$ ment's error a	$\begin{pmatrix} 0 \\ 0 \end{pmatrix} \times \\ 0.07 \in \\ 10^{-2} \\ error fi06D rep020) \rightarrow \\ 1020) - \\ and our$	$\Gamma(J/\psi)$ eV which our fin rom usin ports [Γ $\rightarrow K^+ P$ $\rightarrow K^+ P$ second	$(1S) \rightarrow e^+$ in we divide by st error is the ing our best van $(J/\psi(1S) \rightarrow C^-)] = 1.54$ $(C^-) = (49.1 \pm 100)$ error is the s	$e^{-}/\Gamma_{total}] \times e^{-}/\Gamma_{total}] \times e^{-}$ our best value air experiment's lue. $\phi \pi^{0} \pi^{0}) \times e^{-1} \times e^{-1} \times e^{-1} \times e^{-1} \times e^{-1} \times e^{-1}$. Systematic error
$\Gamma(\phi 2(\pi^+\pi^-)) \times$	$\Gamma(e^+e^-)$		т		OMMENT	Г ₁₀₈ Г ₅ /Г

Citation: R.L. Workman et al. (Particle Data Group), Prog. Theor. Exp. Phys. 2022, 083C01 (2022) and 2023 update

 $\Gamma(\phi\eta) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\Gamma_{109}\Gamma_5/\Gamma$ VALUE (eV) DOCUMENT ID TECN COMMENT 4.6 ± 1.4 OUR AVERAGE 23 BABR $e^+e^- \rightarrow \gamma_{ISR}$ hadrons 07AU BABR 10.6 $e^+e^- \rightarrow \phi \eta \gamma$ ¹ LEES $4.1\!\pm\!1.6\!\pm\!0.4$ ² AUBERT $6.1 \pm 2.7 \pm 0.4$ 6 ¹LEES 23 quotes $\Gamma_{ee}^{J/\psi} \cdot B(J/\psi \rightarrow \phi \eta) \cdot B(\phi \rightarrow \kappa^+ \kappa^-) \cdot B(\eta \rightarrow 3\pi^0) = 0.64 \pm$ ²AUBERT 07AU quotes $\Gamma_{ee}^{J/\psi} \cdot B(J/\psi \rightarrow \phi\eta) \cdot B(\phi \rightarrow K^+K^-) \cdot B(\eta \rightarrow 3\pi) = 0.84 \pm 0.37 \pm 0.05 \text{ eV}.$ $\Gamma(\phi f_0(980) \rightarrow \phi \pi^+ \pi^-) \times \Gamma(e^+ e^-) / \Gamma_{\text{total}}$ $\Gamma_{113}\Gamma_5/\Gamma$ VALUE (eV) DOCUMENT ID TECN COMMENT EVTS 1.44 ± 0.19 OUR AVERAGE BABR 10.6 $e^+e^- \rightarrow \pi^+\pi^-K^+K^-\gamma$ ¹ LEES $1.40 \pm 0.25 \pm 0.01$ 57 ± 9 12F BELL 10.6 $e^+e^- \rightarrow K^+K^-\pi^+\pi^-\gamma$ ² SHEN 09 $1.48 \!\pm\! 0.27 \!\pm\! 0.09 \hspace{0.1in} 60 \!\pm\! 11$ • • • We do not use the following data for averages, fits, limits, etc. • $1.02 \pm 0.24 \pm 0.01$ 20 \pm 5 ³ AUBERT 07AK BABR 10.6 $e^+e^- \rightarrow \pi^+\pi^-K^+K^-\gamma$ ¹LEES 12F reports [$\Gamma(J/\psi(1S) \rightarrow \phi f_0(980) \rightarrow \phi \pi^+\pi^-) \times \Gamma(J/\psi(1S) \rightarrow e^+e^-)/e^+$ $\Gamma_{\text{total}} \propto [B(\phi(1020) \rightarrow K^+ K^-)] = 0.69 \pm 0.11 \pm 0.05$ eV which we divide by our best value $B(\phi(1020) \rightarrow K^+K^-) = (49.1 \pm 0.5) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. ² Multiplied by 2/3 to take into account the $\phi \pi^+ \pi^-$ mode only. Using B($\phi \to \kappa^+ \kappa^-$) $= (49.2 \pm 0.6)\%$. ³Superseded by LEES 12F. AUBERT 07AK reports $[\Gamma(J/\psi(1S) \rightarrow \phi f_0(980) \rightarrow$ $\phi \pi^+ \pi^-) \times \Gamma(J/\psi(1S) \to e^+ e^-)/\Gamma_{\text{total}}] \times [B(\phi(1020) \to K^+ K^-)] = 0.50 \pm 0.11 \pm 0.01 \pm 0.011 \pm 0.011 \pm 0.001)$ 0.04 eV which we divide by our best value B($\phi(1020) \rightarrow K^+ K^-$) = (49.1±0.5)×10⁻². Our first error is their experiment's error and our second error is the systematic error from using our best value. $\Gamma(\phi f_0(980) \rightarrow \phi \pi^0 \pi^0) \times \Gamma(e^+ e^-) / \Gamma_{\text{total}}$ $\Gamma_{114}\Gamma_5/\Gamma$ VALUE (eV) DOCUMENT ID TECN COMMENT EVTS 12F BABR 10.6 $e^+e^- \rightarrow \pi^0 \pi^0 K^+ K^- \gamma$ 16 ± 4 ¹ LEES $0.98 \pm 0.26 \pm 0.01$ • • • We do not use the following data for averages, fits, limits, etc. • • • $0.96 \pm 0.40 \pm 0.01$ 7.0 \pm 2.8 ² AUBERT 07AK BABR 10.6 $e^+e^- \rightarrow \pi^0 \pi^0 K^+ K^- \gamma$ ¹LEES 12F reports [$\Gamma(J/\psi(1S) \rightarrow \phi f_0(980) \rightarrow \phi \pi^0 \pi^0) \times \Gamma(J/\psi(1S) \rightarrow e^+e^-)/e^+$ $\Gamma_{\text{total}} \propto [B(\phi(1020) \rightarrow K^+ K^-)] = 0.48 \pm 0.12 \pm 0.05 \text{ eV}$ which we divide by our best value B($\phi(1020) \rightarrow K^+ K^-$) = (49.1 ± 0.5) × 10⁻². Our first error is their experiment's error and our second error is the systematic error from using our best value. ²Superseded by LEES 12F. AUBERT 07AK reports $[\Gamma(J/\psi(1S) \rightarrow \phi f_0(980) \rightarrow \phi)]$

 $\phi \pi^0 \pi^0$ × $\Gamma(J/\psi(1S) \rightarrow e^+ e^-)/\Gamma_{\text{total}}]$ × $[B(\phi(1020) \rightarrow K^+ K^-)] = 0.47 \pm 0.19 \pm 0.05 \text{ eV}$ which we divide by our best value $B(\phi(1020) \rightarrow K^+ K^-) = (49.1 \pm 0.5) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

 $\begin{array}{c} \Gamma(\phi f_2(1270)) \times \Gamma(e^+e^-)/\Gamma_{total} & \Gamma_{119}\Gamma_5/\Gamma \\ \hline VALUE (eV) & EVTS & DOCUMENT ID & TECN & COMMENT \\ \hline 1.79 \pm 0.32 \substack{+0.02 \\ -0.06} & 61 & ^{1,2,3} LEES & 12F & BABR & 10.6 & e^+e^- \rightarrow \pi^+\pi^-K^+K^-\gamma \\ \bullet \bullet \bullet We \text{ do not use the following data for averages, fits, limits, etc. } \bullet \bullet \end{array}$

4.08 \pm 0.73 $^{+0.05}_{-0.14}$ 44 ^{2,4} AUBERT 07AK BABR 10.6 $e^+e^- \rightarrow \pi^+\pi^-K^+K^-\gamma$

¹LEES 12F reports $[\Gamma(J/\psi(1S) \rightarrow \phi f_2(1270)) \times \Gamma(J/\psi(1S) \rightarrow e^+e^-)/\Gamma_{\text{total}}] \times [B(f_2(1270) \rightarrow \pi\pi)] = 1.51 \pm 0.25 \pm 0.10 \text{ eV}$ which we divide by our best value $B(f_2(1270) \rightarrow \pi\pi) = (84.3^{+2.8}_{-1.0}) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

² Using B($\phi \rightarrow K^+ K^-$) = (48.9 ± 0.5)%.

³ Using $\pi^+\pi^-$ invariant mass between 1.1 and 1.5 GeV. May include other sources such as $f_0(1370)$.

⁴ Superseded by LEES 12F. AUBERT 07AK reports $[\Gamma(J/\psi(1S) \rightarrow \phi f_2(1270)) \times \Gamma(J/\psi(1S) \rightarrow e^+e^-)/\Gamma_{total}] \times [B(f_2(1270) \rightarrow \pi\pi)] = 3.44 \pm 0.55 \pm 0.28 \text{ eV}$ which we divide by our best value $B(f_2(1270) \rightarrow \pi\pi) = (84.3^{+2.8}_{-1.0}) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

$\Gamma(\phi f_2'(1525)) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$

$\Gamma_{124}\Gamma_5/\Gamma$

 $\frac{VALUE (eV)}{\mathbf{8.1 \pm 3.2 \pm 0.2}} \xrightarrow{EVTS} 11 \xrightarrow{DOCUMENT ID} \frac{TECN}{1,2 \text{ LEES}} \xrightarrow{COMMENT} e^+ e^- \rightarrow K_S^0 K_S^0 K^+ K^- \gamma$ $^1 \text{ Dividing by 1/4 to take into account } B(f'_2(1525) \rightarrow K_S^0 K_S^0) = 1/4 B(f'_2(1525) \rightarrow K\overline{K}) \text{ and using } B(\phi \rightarrow K^+ K^-) = (48.9 \pm 0.5)\%.$

²LEES 14H reports $[\Gamma(J/\psi(1S) \rightarrow \phi f'_2(1525)) \times \Gamma(J/\psi(1S) \rightarrow e^+e^-)/\Gamma_{\text{total}}] \times [B(f'_2(1525) \rightarrow K\overline{K})] = 7.2 \pm 2.8 \pm 0.3 \text{ eV}$ which we divide by our best value $B(f'_2(1525) \rightarrow K\overline{K}) = (88.8 \pm 2.2) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

$\Gamma(\phi K^+ K^-) \times \Gamma(\phi K^+ K^-)$	(e+ e [_])/Г	total			Г ₁₃₀ Г ₅ /Г
VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
4.60±0.62±0.05	163	¹ LEES	12F	BABR	$10.6 \ e^+ e^- \rightarrow \\ K^+ K^- K^+ K^- \gamma$
		$(\nu + \nu -)$. г	(1/.)(10	(1) = (1 + 1)/r

¹LEES 12F reports $[\Gamma(J/\psi(1S) \rightarrow \phi K^+ K^-) \times \Gamma(J/\psi(1S) \rightarrow e^+ e^-)/\Gamma_{total}] \times [B(\phi(1020) \rightarrow K^+ K^-)] = 2.26 \pm 0.26 \pm 0.16 \text{ eV}$ which we divide by our best value $B(\phi(1020) \rightarrow K^+ K^-) = (49.1 \pm 0.5) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

$\Gamma(\phi K_S^{\vee} K_S^{\vee}) \times$	$\Gamma(e^+e^-)$	΄)/Γ _{total}				Г ₁₃₁ Г ₅ /Г
VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT	
$3.26 \pm 0.84 \pm 0.03$	29	¹ LEES	14H	BABR	$e^+e^- \rightarrow$	$\kappa^0_S \kappa^0_S \kappa^+ \kappa^- \gamma$
¹ LEES 14н rep	orts [$\Gamma(J/$	$\psi(1S) \rightarrow \phi K^0_S$	$\kappa_S^0)$	× $\Gamma(J/$	$\psi(1S) ightarrow$	$e^+ e^-)/\Gamma_{\rm total}]$ ×
$[B(\phi(1020) ightarrow]$	• K ⁺ K ⁻	$()] = 1.6 \pm 0.4$	± 0.1 (eV whic	h we divide	by our best value
$B(\phi(1020) ightarrow error and our s$	$K^+ K^-)$ second error	$0=(49.1\pm0.5)$ or is the systemat	$ imes 10^{-3}$ ic error	² . Our from us	first error is sing our bes	their experiment's to alue.

$\Gamma(f_{2}'(1525)K^{+}K^{-}) \times \Gamma(e^{+}e^{-})/\Gamma_{\text{total}}$	Γ ₁₃₆ Γ ₅ /Γ
5.8±1.9±0.1 16 ^{1,2} LEES	14H BABR $e^+e^- \rightarrow K^0_c K^0_c K^+ K^- \gamma$
¹ Dividing by 1/4 to take into account B(f'_2) $\kappa \overline{\kappa}$).	$(1525) \rightarrow \mathcal{K}^0_S \mathcal{K}^0_S) = 1/4 \operatorname{B}(f'_2(1525) \rightarrow$
² LEES 14H reports $[\Gamma(J/\psi(1S) \rightarrow f'_{2}(1525))]$ $\times [B(f'_{2}(1525) \rightarrow K\overline{K})] = 5.12 \pm 1.68 \pm 100$	$(K^+K^-) \times \Gamma(J/\psi(1S) \to e^+e^-)/\Gamma_{\text{total}}$ 0.20 eV which we divide by our best value
$B(f_2(1525) \rightarrow KK) = (88.8 \pm 2.2) \times 10$ and our second error is the systematic error	from using our best value.
$\Gamma(2(\pi^{+}\pi^{-})\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{\text{total}}$	Γ ₁₅₇ Γ ₅ /Γ
303+5+18 4990 AUBERT 07	TALL BABR 10.6 e ⁺ e ⁻ $\rightarrow 2(\pi^+\pi^-)\pi^0\gamma$
$I(\pi^+\pi^-3\pi^0) \times I(e^+e^-)/I_{total}$	I 159I 5/I
100 +50 OUR AVERAGE Error includes sc	ale factor of 4.3.
$55 \pm 16 \pm 1$ 14k ¹ LEES 21	BABR 10.6 $e^+e^- \rightarrow 2(\pi^+\pi^-)3\pi^0\gamma$
150.0± 4.0±15.0 2.3k LEES 18E	BABR 10.6 $e^+e^- \rightarrow \pi^+\pi^-3\pi^0\gamma$
¹ LEES 21 reports [$\Gamma(J/\psi(1S) \rightarrow \pi^+\pi^-3\pi)$	$(\pi^0) \times \Gamma(J/\psi(1S) \rightarrow e^+ e^-)/\Gamma_{\text{total}} \times$
$[\Gamma(\psi(2S) \rightarrow J/\psi(1S)\pi^+\pi^-)/\Gamma_{total}] = 1$	$9.2 \pm 4.5 \pm 3.2$ eV which we divide by our
best value $\Gamma(\psi(2S) \rightarrow J/\psi(1S)\pi^+\pi^-)/\Gamma$	$t_{total} = 0.3469 \pm 0.0034$. Our first error is
their experiment's error and our second error	r is the systematic error from using our best
value.	r is the systematic error from using our best
their experiment's error and our second error value. $\Gamma(\pi^+\pi^-4\pi^0) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$	r is the systematic error from using our best $\Gamma_{162}\Gamma_5/\Gamma$
their experiment's error and our second error value. $\Gamma(\pi^{+}\pi^{-}4\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{\text{total}}$ <u>VALUE (eV)</u> <u>EVTS</u> <u>DOCUMENT ID</u>	r is the systematic error from using our best $\Gamma_{162}\Gamma_5/\Gamma$ <u>TECN</u> <u>COMMENT</u>
their experiment's error and our second error value. $\Gamma(\pi^+\pi^-4\pi^0) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$ $\frac{VALUE (eV)}{35.8 \pm 4.4 \pm 5.4} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ LEES 21	r is the systematic error from using our best $\Gamma_{162}\Gamma_{5}/\Gamma$ $\frac{TECN}{\text{BABR}} \xrightarrow{COMMENT} e^+e^- \rightarrow \gamma_{ISR}(\pi^+\pi^-4\pi^0)$
their experiment's error and our second error value. $\Gamma(\pi^{+}\pi^{-}4\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{\text{total}}$ $\frac{VALUE (eV)}{35.8 \pm 4.4 \pm 5.4} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $IEES 21$ $\Gamma(\rho^{\pm}\pi^{\mp}\pi^{0}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{\text{total}}$	r is the systematic error from using our best $ \frac{\Gamma_{162}\Gamma_{5}/\Gamma}{\Gamma_{160}\Gamma_{5}} $ $ \frac{COMMENT}{e^{+}e^{-} \rightarrow \gamma_{ISR}(\pi^{+}\pi^{-}4\pi^{0})} $ $ \Gamma_{160}\Gamma_{5}/\Gamma $
their experiment's error and our second error value. $\Gamma(\pi^{+}\pi^{-}4\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{35.8 \pm 4.4 \pm 5.4} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $\Gamma(\rho^{\pm}\pi^{\mp}\pi^{0}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{2} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$	r is the systematic error from using our best $\Gamma_{162}\Gamma_{5}/\Gamma$ $\frac{TECN}{LC} \xrightarrow{COMMENT} e^+e^- \rightarrow \gamma_{ISR}(\pi^+\pi^-4\pi^0)$ $\Gamma_{160}\Gamma_{5}/\Gamma$ $\underline{TECN} \xrightarrow{COMMENT}$
their experiment's error and our second error value. $\Gamma(\pi^{+}\pi^{-}4\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{\text{total}}$ $\frac{VALUE (eV)}{35.8 \pm 4.4 \pm 5.4} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $\Gamma(\rho^{\pm}\pi^{\mp}\pi^{0}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{\text{total}}$ $\frac{VALUE (eV)}{78.0 \pm 9.0 \pm 8.0} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $1.2 \text{k} \text{ LEES}$	r is the systematic error from using our best
their experiment's error and our second error value. $\Gamma(\pi^{+}\pi^{-}4\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{\text{total}}$ $\frac{VALUE (eV)}{35.8 \pm 4.4 \pm 5.4} \xrightarrow{EVTS} \xrightarrow{DOCUMENT \ ID}$ $\Gamma(\rho^{\pm}\pi^{\mp}\pi^{0}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{\text{total}}$ $\frac{VALUE (eV)}{78.0 \pm 9.0 \pm 8.0} \xrightarrow{EVTS} \xrightarrow{DOCUMENT \ ID}$ $\Gamma(\rho^{+}\rho^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{\text{total}}$ $\Gamma(\rho^{+}\rho^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{\text{total}}$ $\Gamma(\rho^{+}\rho^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{\text{total}}$	r is the systematic error from using our best $\Gamma_{162}\Gamma_{5}/\Gamma$ $\Gamma_{162}\Gamma_{5}/\Gamma$ $\Gamma_{160}\Gamma_{5}/\Gamma$ $\Gamma_{160}\Gamma_{5}/\Gamma$ $\Gamma_{18E} \xrightarrow{TECN} COMMENT$ $\Gamma_{10.6 e^+e^- \rightarrow \pi^+\pi^-3\pi^0\gamma}$ $\Gamma_{161}\Gamma_{5}/\Gamma$ $TECN = COMMENT$
their experiment's error and our second error value. $\Gamma(\pi^{+}\pi^{-}4\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{35.8 \pm 4.4 \pm 5.4} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $35.8 \pm 4.4 \pm 5.4 \xrightarrow{340} \text{LEES} 21$ $\Gamma(\rho^{\pm}\pi^{\mp}\pi^{0}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{78.0 \pm 9.0 \pm 8.0} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $78.0 \pm 9.0 \pm 8.0 \xrightarrow{1.2k} \text{LEES}$ $\Gamma(\rho^{+}\rho^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{23.0 \pm 5.0} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$	r is the systematic error from using our best $\Gamma_{162}\Gamma_5/\Gamma$ $\Gamma_{162}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{161}\Gamma_5/\Gamma$ $\Gamma_{161}\Gamma_5/\Gamma$ $\Gamma_{185}\Gamma_{10.6\ e^+e^- \rightarrow e^+e^- 2e^0e^-}$
their experiment's error and our second error value. $\Gamma(\pi^{+}\pi^{-}4\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{35.8 \pm 4.4 \pm 5.4} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $35.8 \pm 4.4 \pm 5.4 \xrightarrow{340} \text{LEES} 21$ $\Gamma(\rho^{\pm}\pi^{\mp}\pi^{0}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{78.0 \pm 9.0 \pm 8.0} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $78.0 \pm 9.0 \pm 8.0 \xrightarrow{1.2k} \text{LEES}$ $\Gamma(\rho^{+}\rho^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{33.0 \pm 5.0 \pm 3.3} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $12k \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $32.0 \pm 5.0 \pm 3.3 \xrightarrow{529} \text{LEES}$	r is the systematic error from using our best $ \frac{\Gamma_{162}\Gamma_5/\Gamma}{\Gamma_{162}\Gamma_5/\Gamma} $ $ \frac{TECN}{BABR} \xrightarrow{COMMENT} e^+ e^- \rightarrow \gamma_{ISR}(\pi^+\pi^-4\pi^0) $ $ \Gamma_{160}\Gamma_5/\Gamma $ $ \frac{TECN}{18E} \xrightarrow{COMMENT} 10.6 e^+ e^- \rightarrow \pi^+\pi^-3\pi^0\gamma $ $ \Gamma_{161}\Gamma_5/\Gamma $ $ \frac{TECN}{18E} \xrightarrow{COMMENT} 10.6 e^+ e^- \rightarrow \pi^+\pi^-3\pi^0\gamma $
Their experiment's error and our second error value. $\Gamma(\pi^{+}\pi^{-}4\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{35.8 \pm 4.4 \pm 5.4} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $35.8 \pm 4.4 \pm 5.4 \xrightarrow{340} \text{LEES} 21$ $\Gamma(\rho^{\pm}\pi^{\mp}\pi^{0}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{78.0 \pm 9.0 \pm 8.0} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $78.0 \pm 9.0 \pm 8.0 \xrightarrow{1.2k} \text{LEES}$ $\Gamma(\rho^{+}\rho^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{33.0 \pm 5.0 \pm 3.3} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $\frac{DOCUMENT ID}{529} \text{LEES}$ $\Gamma(\pi^{+}\pi^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$	r is the systematic error from using our best $ \frac{\Gamma_{162}\Gamma_5/\Gamma}{\Gamma_{162}\Gamma_5/\Gamma} $ $ \frac{\Gamma_{160}\Gamma_5/\Gamma}{\Gamma_{160}\Gamma_5/\Gamma} $ $ \frac{\Gamma_{160}\Gamma_5/\Gamma}{\Gamma_{10.6\ e^+e^- \rightarrow \pi^+\pi^-3\pi^0\gamma} $ $ \frac{\Gamma_{161}\Gamma_5/\Gamma}{\Gamma_{10.6\ e^+e^- \rightarrow \pi^+\pi^-3\pi^0\gamma} $ $ \Gamma_{163}\Gamma_5/\Gamma $
their experiment's error and our second error value. $\Gamma(\pi^{+}\pi^{-}4\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{35.8 \pm 4.4 \pm 5.4} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $35.8 \pm 4.4 \pm 5.4 \xrightarrow{340} \text{LEES} 21$ $\Gamma(\rho^{\pm}\pi^{\mp}\pi^{0}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{78.0 \pm 9.0 \pm 8.0} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $78.0 \pm 9.0 \pm 8.0 \xrightarrow{1.2k} \text{LEES}$ $\Gamma(\rho^{+}\rho^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{33.0 \pm 5.0 \pm 3.3} \xrightarrow{529} \text{LEES}$ $\Gamma(\pi^{+}\pi^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (keV)}{VALUE (keV)} \xrightarrow{DOCUMENT ID}$	r is the systematic error from using our best $\Gamma_{162}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{161}\Gamma_5/\Gamma$ $\Gamma_{161}\Gamma_5/\Gamma$ $\Gamma_{18E} \begin{array}{c} TECN \\ BABR \end{array} \begin{array}{c} COMMENT \\ 10.6 e^+e^- \rightarrow \pi^+\pi^- 3\pi^0\gamma \end{array}$ $\Gamma_{161}\Gamma_5/\Gamma$ $\Gamma_{163}\Gamma_5/\Gamma$ $\Gamma_{163}\Gamma_5/\Gamma$ $\Gamma_{163}\Gamma_5/\Gamma$ $\Gamma_{163}\Gamma_5/\Gamma$
their experiment's error and our second error value. $\Gamma(\pi^{+}\pi^{-}4\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{35.8 \pm 4.4 \pm 5.4} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $35.8 \pm 4.4 \pm 5.4 \xrightarrow{340} \text{LEES} 21$ $\Gamma(\rho^{\pm}\pi^{\mp}\pi^{0}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{78.0 \pm 9.0 \pm 8.0} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $78.0 \pm 9.0 \pm 8.0 \xrightarrow{1.2k} \text{LEES}$ $\Gamma(\rho^{+}\rho^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{33.0 \pm 5.0 \pm 3.3} \xrightarrow{529} \text{LEES}$ $\Gamma(\pi^{+}\pi^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (keV)}{2000000000000000000000000000000000000$	r is the systematic error from using our best
their experiment's error and our second error value. $\Gamma(\pi^{+}\pi^{-}4\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{35.8 \pm 4.4 \pm 5.4} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $35.8 \pm 4.4 \pm 5.4 \xrightarrow{340} \text{LEES} 21$ $\Gamma(\rho^{\pm}\pi^{\mp}\pi^{0}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{78.0 \pm 9.0 \pm 8.0} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $78.0 \pm 9.0 \pm 8.0 \xrightarrow{1.2k} \text{LEES}$ $\Gamma(\rho^{+}\rho^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{33.0 \pm 5.0 \pm 3.3} \xrightarrow{529} \text{LEES}$ $\Gamma(\pi^{+}\pi^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (keV)}{2000000000000000000000000000000000000$	r is the systematic error from using our best $\Gamma_{162}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{161}\Gamma_5/\Gamma$ $\Gamma_{161}\Gamma_5/\Gamma$ $\Gamma_{161}\Gamma_5/\Gamma$ $\Gamma_{161}\Gamma_5/\Gamma$ $\Gamma_{163}\Gamma_5/\Gamma$
their experiment's error and our second error value. $\Gamma(\pi^{+}\pi^{-}4\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{35.8 \pm 4.4 \pm 5.4} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $35.8 \pm 4.4 \pm 5.4 \xrightarrow{340} \text{LEES} 21$ $\Gamma(\rho^{\pm}\pi^{\mp}\pi^{0}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{78.0 \pm 9.0 \pm 8.0} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $78.0 \pm 9.0 \pm 8.0 \xrightarrow{1.2k} \text{LEES}$ $\Gamma(\rho^{+}\rho^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{33.0 \pm 5.0 \pm 3.3} \xrightarrow{529} \text{LEES}$ $\Gamma(\pi^{+}\pi^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (keV)}{0.1248 \pm 0.0019 \pm 0.0026} \text{LEES}$ $\bullet \bullet \text{ We do not use the following data for aver}$ $0.122 \pm 0.005 \pm 0.008 \text{ AUBERT,B}$	r is the systematic error from using our best
their experiment's error and our second error value. $\Gamma(\pi^{+}\pi^{-}4\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{35.8 \pm 4.4 \pm 5.4} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $35.8 \pm 4.4 \pm 5.4 \xrightarrow{340} \text{LEES} 21$ $\Gamma(\rho^{\pm}\pi^{\mp}\pi^{0}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{78.0 \pm 9.0 \pm 8.0} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $78.0 \pm 9.0 \pm 8.0 \xrightarrow{1.2k} \text{LEES}$ $\Gamma(\rho^{+}\rho^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{33.0 \pm 5.0 \pm 3.3} \xrightarrow{529} \text{LEES}$ $\Gamma(\pi^{+}\pi^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (keV)}{0.1248 \pm 0.0019 \pm 0.0026} \text{LEES}$ $\bullet \bullet \text{ We do not use the following data for aver}$ $0.122 \pm 0.005 \pm 0.008 \text{ AUBERT,B}$ $\Gamma(2(\pi^{+}\pi^{-}\pi^{0})) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$	r is the systematic error from using our best $\Gamma_{162}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{161}\Gamma_5/\Gamma$ $\Gamma_{18E} \begin{array}{c} \frac{TECN}{BABR} & \frac{COMMENT}{10.6 \ e^+ e^- \rightarrow \ \pi^+ \pi^- 3\pi^0 \gamma} \\ \hline \Gamma_{161}\Gamma_5/\Gamma$ $\Gamma_{18E} \begin{array}{c} \frac{TECN}{BABR} & \frac{COMMENT}{10.6 \ e^+ e^- \rightarrow \ \pi^+ \pi^- 3\pi^0 \gamma} \\ \hline \Gamma_{163}\Gamma_5/\Gamma$ $\Gamma_{21B} \begin{array}{c} \frac{TECN}{BABR} & \frac{COMMENT}{10.5 \ e^+ e^- \rightarrow \ \pi^+ \pi^- \pi^0 \gamma} \\ \hline \Gamma_{21B} \begin{array}{c} \frac{TECN}{BABR} & \frac{COMMENT}{10.5 \ e^+ e^- \rightarrow \ \pi^+ \pi^- \pi^0 \gamma} \\ \hline \Gamma_{21B} \begin{array}{c} \frac{TECN}{BABR} & \frac{COMMENT}{10.5 \ e^+ e^- \rightarrow \ \pi^+ \pi^- \pi^0 \gamma} \\ \hline \Gamma_{164}\Gamma_5/\Gamma \end{array}$
their experiment's error and our second error value. $\Gamma(\pi^{+}\pi^{-}4\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{35.8 \pm 4.4 \pm 5.4} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $35.8 \pm 4.4 \pm 5.4 \xrightarrow{340} \text{LEES} 21$ $\Gamma(\rho^{\pm}\pi^{\mp}\pi^{0}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{78.0 \pm 9.0 \pm 8.0} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$ $78.0 \pm 9.0 \pm 8.0 \xrightarrow{1.2k} \text{LEES}$ $\Gamma(\rho^{+}\rho^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (eV)}{33.0 \pm 5.0 \pm 3.3} \xrightarrow{529} \text{LEES}$ $\Gamma(\pi^{+}\pi^{-}\pi^{0}) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (keV)}{2} \xrightarrow{DOCUMENT ID}$ $0.1248 \pm 0.0019 \pm 0.0026 \qquad \text{LEES}$ $\bullet \bullet \text{ We do not use the following data for aver}$ $0.122 \pm 0.005 \pm 0.008 \qquad \text{AUBERT,B}$ $\Gamma(2(\pi^{+}\pi^{-}\pi^{0})) \times \Gamma(e^{+}e^{-})/\Gamma_{total}$ $\frac{VALUE (10^{-2} keV)}{2} \xrightarrow{EVTS} \xrightarrow{DOCUMENT ID}$	r is the systematic error from using our best $\Gamma_{162}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{160}\Gamma_5/\Gamma$ $\Gamma_{161}\Gamma_5/\Gamma$ $\Gamma_{161}\Gamma_5/\Gamma$ $\Gamma_{161}\Gamma_5/\Gamma$ $\Gamma_{161}\Gamma_5/\Gamma$ $\Gamma_{163}\Gamma_5/\Gamma$ $\Gamma_{163}\Gamma_5/\Gamma$ $\Gamma_{163}\Gamma_5/\Gamma$ $\Gamma_{163}\Gamma_5/\Gamma$ $\Gamma_{163}\Gamma_5/\Gamma$ $\Gamma_{164}\Gamma_5/\Gamma$ $\Gamma_{164}\Gamma_5/\Gamma$ $\Gamma_{164}\Gamma_5/\Gamma$ $\Gamma_{164}\Gamma_5/\Gamma$

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$\Gamma(\pi^+\pi^-\pi^0 K^-$ VALUE (eV)	⁺K−) × _{EVTS}	Γ(e ⁺ e ⁻)/Γ _{tα}	otal TECN	СОММЕ	NT	Г ₁₆₅ Г ₅ /Г
107.0±4.3±6.4	768	AUBERT 07A	U BABR	10.6 e ⁻	$^+e^- \rightarrow K^+ K$	$\chi^{-}\pi^{+}\pi^{-}\pi^{0}\gamma$
$\Gamma(2(\pi^+\pi^-))$	× Г(е+е _{EVTS}	e)/Γ _{total} DOCUMENT	ID	TECN	COMMENT	Г ₁₆₇ Г ₅ /Г
20.4±0.9±0.4 • • • We do not	use the fo	LEES llowing data for	12E averages,	BABR fits, lim	10.6 e^+e^- - its, etc. • • •	$\rightarrow 2\pi^+ 2\pi^- \gamma$
$19.5 \pm 1.4 \pm 1.3$ ¹ Superseded b	270 y LEES 12	¹ AUBERT E.	05 D	BABR	10.6 e ⁺ e ⁻ -	$\rightarrow 2(\pi^+\pi^-)\gamma$
$\Gamma(3(\pi^+\pi^-))$	× Г(e+e	e [_])/Γ _{total}				Г ₁₆₈ Г ₅ /Г
$\underline{VALUE} (10^{-2} \text{ keV})$	EVTS	DOCUMENT	ID	TECN	COMMENT	
$2.37 \pm 0.16 \pm 0.14$	496	AUBERT	06 D	BABR	10.6 e ⁺ e ⁻ -	$\rightarrow 3(\pi^+\pi^-)\gamma$
Γ(2(π ⁺ π ⁻) 3π <u>VALUE (eV)</u>	. ⁰) × Γ(e ⁺ e ⁻)/Γ _{total} <u>DOCUMENT I</u>	D <u>TEC</u>	<u>N _CO</u> Л	MMENT	Г ₁₆₉ Г ₅ /Г
345±10±50	14k	LEES	21 BA	BR 10.0	$5 e^+e^- \rightarrow 2$	$(\pi^+\pi^-)3\pi^0\gamma$
$ \begin{array}{c} \Gamma \big(2 \big(\pi^+ \pi^- \big) \eta \big) \\ \hline \\ \underline{VALUE (eV)} \\ 13.1 \pm 2.4 \pm 0.1 \\ \hline \\ 1 \text{ AUBERT 07A} \\ \times [B(\eta \rightarrow 22) \\ 2\gamma) = (39.36) \\ \text{ error is the sy} \end{array} $	× $\Gamma(e^+)$ <u>EVTS</u> 85 (U reports [2γ] = 5.1(± 0.18) × vstematic e	$e^{-})/\Gamma_{total}$ DOCUMENT ID 1 AUBERT $\Gamma(J/\psi(1S) \rightarrow 2$ $5 \pm 0.85 \pm 0.39$ 10^{-2} . Our first error from using c	$\frac{2}{2(\pi^+\pi^-)}$ eV which error is the pure best weights	$\frac{\pi ECN}{\eta} imes \Gamma$ BABR 1 η) $ imes \Gamma$ h we div heir exponent value.	COMMENT 10.6 $e^+e^- ightarrow (J/\psi(1S) ightarrow (J/\psi(1S) ightarrow eriment's error)$	$\Gamma_{171}\Gamma_5/\Gamma$ $2(\pi^+\pi^-)\eta\gamma$ $e^+e^-)/\Gamma_{total}]$ st value B(η → and our second
$\Gamma(2(\pi^+\pi^-\pi^0)$	η) × Γ($(e^+e^-)/\Gamma_{total}$				Г ₁₇₃ Г ₅ /Г
VALUE (eV)	EVTS	DOCUMENT I	D <u>TEC</u>	<u>N</u> <u>CON</u>	AMENT	0
9.1±2.6±1.4	14k	LEES	21 BAI	3R 10.0	$5 e^+e^- \rightarrow 2$	$(\pi^+\pi^-)3\pi^0\gamma$
$\frac{\Gamma(\pi^+\pi^-\pi^0\pi^0)}{\frac{VALUE(eV)}{2}}$	η) × Γ(e ⁺ e ⁻)/Γ _{total}	D <u>TEC</u>	<u>N _CON</u>	MMENT	Г ₁₇₄ Г ₅ /Г
13.1± 2.7 OUR 26.1±17.9±0.3 12.8± 1.8±2.0	AVERAGE 14k 203	¹ LEES LEES	21 BAI 18E BAI	3R 10.0 3R 10.0	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$(\pi^+\pi^-)_{3\pi^0\gamma}^{\gamma}_{\pi^-\pi^0\pi^0\eta\gamma}$
¹ LEES 21 rep × [B($\eta \rightarrow \infty$ $\pi^+\pi^-\pi^0$) = second error i	orts $[\Gamma(J/\pi \pi^+ \pi^- \pi^0)]$ = (23.02 ± is the system	$\psi(1S) \rightarrow \pi^+ \pi^-$ $] = 6 \pm 4 \pm 1$ $0.25) \times 10^{-2}$. Containing the second s	$-\pi^0\pi^0\eta^2$ eV which Our first e using ou	$) \times \Gamma(0)$ we dive we we have the set of th	$(J/\psi(1S) ightarrow J/\psi(1S) ightarrow$ ide by our bester experiment between the second	$e^+e^-)/\Gamma_{ ext{total}}]$ st value $B(\eta o$ c's error and our
$\Gamma(\rho^{\pm}\pi^{\mp}\pi^{0}n)$	$\times \Gamma(e^+$	e)/Гтата				Γ₁┯₅Γ₅ /Γ

$(\rho^{\pm}\pi^{\pm}\pi^{\bullet}\eta) \times I($	e'' e_)/I t	otal			₁₇₅ ₅ /
VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
$10.5 \pm 4.1 \pm 1.6$	168	LEES	18E	BABR	$10.6 \begin{array}{c} e^+ e^- \\ \pi^+ \pi^- \pi^0 \pi^0 \eta \gamma \end{array}$

	_ ⁺ e ⁻)/Γ _t	otal				Г ₁₇₆ Г ₅ /Г
VALUE (eV)	EVTS	DOCUMENT	" ID	TECN	COMMENT	,
• • • We do not use	the followir	ng data for aver	ages, fits	, limits,	etc. • • •	
$1.78\!\pm\!0.11\!\pm\!0.05$	462	¹ LEES	15J	BABR	$e^+e^- ightarrow$	$\kappa^+ \kappa^- \gamma$
$1.94\!\pm\!0.11\!\pm\!0.05$	462	² LEES	15J	BABR	$e^+e^- \rightarrow$	$K^+K^-\gamma$
$1.42 \pm 0.23 \pm 0.08$	51	³ LEES	13Q	BABR	$e^+e^- ightarrow$	$K^+K^-\gamma$
$rac{1}{2} \sin \phi ~> 0.$ $rac{2}{2} \sin \phi ~< 0.$ $rac{3}{2}$ Interference with r	non-resonar	nt K^+K^- proc	luction no	ot taken	into accour	ıt.
$\Gamma(K^0_S K^0_L \pi^0) \times \Gamma$	(e ⁺ e ⁻)/	Γ _{total}				Г ₁₈₂ Г ₅ /Г
VALUE (eV)	EVTS	DOCUMENT	ĪD	TECN	<u>COMMENT</u>	0 0 0
$11.4 \pm 1.3 \pm 0.6$	182	LEES	17A	BABR	$e^+e^- \rightarrow$	$K_S^0 K_L^0 \pi^0 \gamma$
L(K*(802)0 <u>K</u> 0+0	$c \rightarrow K^0$	(<i>K</i> ⁰ ,π ⁰) × Γ	·(_+`	/г		
VALUE (eV)	EVTS	DOCUMENT		TECN	COMMENT	. 193. 2/ .
6.7±0.9±0.4	106	LEES	17A	BABR	$e^+e^- \rightarrow$	$K_{c}^{0}K_{c}^{0}\pi^{0}\gamma$
	200			2,1211		STL T
Г(<i>К</i> *2(1430) ⁰ <i>К</i> ⁰ +	$c.c. \rightarrow K$	$(S_{S}^{0}K_{L}^{0}\pi^{0}) \times$	Γ(e ⁺ e ⁻	⁻)/Γ _{tot}	al	Г ₁₈₄ Г ₅ /Г
VALUE (eV)	EVTS	DOCUMENT	ID	TECN	COMMENT	
2.4±0.7±0.1	37	LEES	17A	BABR	$e^+ e^- ightarrow$	$K_{S}^{0} K_{I}^{0} \pi^{0} \gamma$
$\Gamma(K_{S}^{0}K^{*}(892)^{0}\pi^{+})$	⁻ π ⁻) × Γ		otal	TECN	COMMENT	Г ₂₀₁ Г ₅ /Г
Γ(K⁰_SK*(892)⁰π⁺ <u>VALUE (eV)</u>	⁻ π ⁻) × Ι	(e⁺e⁻)/Γ_{tc} <u>DOCUMENT I</u>	otal ID 22	<u>TECN</u>	<u>COMMENT</u>	Γ ₂₀₁ Γ ₅ /Γ
Γ(K⁰_SK*(892)⁰π⁺ <u>VALUE (eV)</u> 9.45±3.15±0.90	⁻ π ⁻) × Ι	Γ(e⁺e⁻)/Γ_{tc} <u>DOCUMENT I</u> LEES	otal ID 23	<u>tecn</u> BABR	$\frac{COMMENT}{e^+e^-} \rightarrow$	$\Gamma_{201}\Gamma_5/\Gamma$ γ_{ISR} hadrons
Γ(K ⁰ _S K*(892) ⁰ π ⁺ ^{VALUE (eV)} 9.45±3.15±0.90 Γ(K ⁰ _S K*(892) ⁰ π ⁰	⁻ π ⁻) × Γ 	Γ(e ⁺ e ⁻)/Γ _{tc} <u>DOCUMENT I</u> LEES (e ⁺ e ⁻)/Γ _{tot}	otal ID 23	<u>TECN</u> BABR	$\frac{COMMENT}{e^+e^-} \rightarrow$	$\Gamma_{201}\Gamma_5/\Gamma$ γ_{ISR} hadrons $\Gamma_{202}\Gamma_5/\Gamma$
Γ(K⁰_SK*(892)⁰π⁺ <u>VALUE (eV)</u> 9.45±3.15±0.90 Γ(K⁰_SK*(892)⁰π⁰ VALUE (eV)	⁻ π ⁻) × Γ π ⁰) × Γ	$\frac{DOCUMENT I}{DOCUMENT I}$ LEES $(e^+e^-)/\Gamma_{tot}$ DOCUMENT I	23 ID	<u>TECN</u> BABR <u>TECN</u>	$\frac{COMMENT}{e^+e^-} \rightarrow$	$ \Gamma_{201} \Gamma_5 / \Gamma $ $ \gamma_{ISR} hadrons $ Γ ₂₀₂ Γ ₅ / Γ
$ \Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{+}) \\ \frac{VALUE (eV)}{9.45 \pm 3.15 \pm 0.90} \\ \Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{0}) \\ \frac{VALUE (eV)}{5.59 \pm 0.79 \pm 0.55} $	⁻ π ⁻) × Γ 	Γ(e⁺e⁻)/Γ_{tc} <u>DOCUMENT I</u> LEES (e ⁺ e ⁻)/Γ _{tot} <u>DOCUMENT I</u> LEES	btal <u>1</u> 23 al <u>1</u> 23	<u>TECN</u> BABR <u>TECN</u> BABR	$\frac{COMMENT}{e^+e^-} \rightarrow \frac{COMMENT}{e^+e^-} \rightarrow \frac{COMMENT}{e^+e^-}$	$Γ_{201}Γ_5/Γ$ $γ_{ISR}$ hadrons $Γ_{202}Γ_5/Γ$ $γ_{ISR}$ hadrons
$\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{+}$ $\frac{VALUE(eV)}{9.45 \pm 3.15 \pm 0.90}$ $\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{0}$ $\frac{VALUE(eV)}{5.59 \pm 0.79 \pm 0.55}$	⁻ π ⁻) × Γ 	(e⁺e⁻)/Γ_{tc} <u>DOCUMENT I</u> LEES (e ⁺ e ⁻)/Γ _{tot} <u>DOCUMENT I</u> LEES Γ (c+ c-)/Γ	23 al 23 23	<u>TECN</u> BABR <u>TECN</u> BABR	$\frac{COMMENT}{e^+e^-} \rightarrow \frac{COMMENT}{e^+e^-} \rightarrow \frac{COMMENT}{e^+e^-}$	$\Gamma_{201}\Gamma_5/\Gamma$ γ_{ISR} hadrons $\Gamma_{202}\Gamma_5/\Gamma$ γ_{ISR} hadrons
$\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{+}$ <u>VALUE (eV)</u> 9.45±3.15±0.90 $\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{0}$ <u>VALUE (eV)</u> 5.59±0.79±0.55 $\Gamma(K^{\mp} K^{*}(892)^{\pm} \pi^{-}$	⁻ π ⁻) × Γ 	$\frac{DOCUMENT I}{DOCUMENT I}$ LEES $(e^+e^-)/\Gamma_{tot}$ $\frac{DOCUMENT I}{DOCUMENT I}$ LEES $\Gamma(e^+e^-)/\Gamma_t$	btal ID 23 al ID 23 cotal	<u>TECN</u> BABR <u>TECN</u> BABR	$\frac{COMMENT}{e^+e^-} \rightarrow \frac{COMMENT}{e^+e^-} \rightarrow \frac{COMAENT}{e^+e^-} \rightarrow COMAE$	
$\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{+}$ $\frac{VALUE (eV)}{9.45 \pm 3.15 \pm 0.90}$ $\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{0}$ $\frac{VALUE (eV)}{5.59 \pm 0.79 \pm 0.55}$ $\Gamma(K^{\mp} K^{*}(892)^{\pm} \pi^{-1})$ $\frac{VALUE (eV)}{100 \pm 0.00 \pm 0.00}$	⁻ π ⁻) × Γ 	$\frac{DOCUMENT I}{DOCUMENT I}$ $\frac{DOCUMENT I}{LEES}$ $(e^+ e^-)/\Gamma_{tot}$ $\frac{DOCUMENT I}{LEES}$ $\Gamma(e^+ e^-)/\Gamma_{t}$	btal ID 23 al ID 23 cotal ID	<u>TECN</u> BABR <u>TECN</u> BABR	$\frac{COMMENT}{e^+e^-} \rightarrow \frac{COMMENT}{e^+e^-} \rightarrow \frac{COMAT}{e^+e^-} \rightarrow \frac{COMAT}$	$Γ_{201}Γ_5/Γ$ $γ_{ISR}$ hadrons $Γ_{202}Γ_5/Γ$ $γ_{ISR}$ hadrons $Γ_{203}Γ_5/Γ$
$\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{+}$ $\frac{VALUE (eV)}{9.45 \pm 3.15 \pm 0.90}$ $\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{0}$ $\frac{VALUE (eV)}{5.59 \pm 0.79 \pm 0.55}$ $\Gamma(K^{\mp} K^{*}(892)^{\pm} \pi^{+})$ $\frac{VALUE (eV)}{18.6 \pm 6.3 \pm 1.8}$	⁻ π ⁻) × Γ 	r(e ⁺ e ⁻)/Γ _{tcc} <u>DOCUMENT I</u> LEES (e ⁺ e ⁻)/Γ _{tot} <u>DOCUMENT I</u> LEES r(e ⁺ e ⁻)/Γ _t <u>DOCUMENT I</u> LEES	btal D 23 al D 23 cotal D 23	<u>TECN</u> BABR <u>TECN</u> BABR <u>TECN</u> BABR	$\frac{COMMENT}{e^+e^-} \rightarrow \frac{COMMENT}{e^+e^-} \rightarrow \frac{COMAENT}{e^+e^-} \rightarrow COMAE$	$ \Gamma_{201} \Gamma_5 / \Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{202} \Gamma_5 / \Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{203} \Gamma_5 / \Gamma $ $ \gamma_{ISR} hadrons $
$\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{+}$ $\frac{VALUE (eV)}{9.45 \pm 3.15 \pm 0.90}$ $\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{0}$ $\frac{VALUE (eV)}{5.59 \pm 0.79 \pm 0.55}$ $\Gamma(K^{\mp} K^{*}(892)^{\pm} \pi^{-}$ $\frac{VALUE (eV)}{18.6 \pm 6.3 \pm 1.8}$ $\Gamma(K^{\mp} K^{*}(892)^{\pm} \pi^{-})$	⁻ π ⁻) × Γ 	$\frac{(e^+ e^-)}{\Gamma_{tot}}$ $\frac{DOCUMENT I}{LEES}$ $(e^+ e^-)/\Gamma_{tot}$ $\frac{DOCUMENT I}{LEES}$ $\Gamma(e^+ e^-)/\Gamma_{t}$ $\frac{DOCUMENT I}{LEES}$ $\Gamma(e^+ e^-)/\Gamma_{tot}$	btal ID 23 al ID 23 cotal ID 23	<u>TECN</u> BABR <u>TECN</u> BABR <u>TECN</u> BABR	$\frac{COMMENT}{e^+ e^- \rightarrow}$ $\frac{COMMENT}{e^+ e^- \rightarrow}$ $\frac{COMMENT}{e^+ e^- \rightarrow}$	$ \Gamma_{201}\Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{202}\Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{203}\Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{205}\Gamma_5/\Gamma $
$\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{+}$ $\frac{VALUE (eV)}{9.45 \pm 3.15 \pm 0.90}$ $\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{0}$ $\frac{VALUE (eV)}{5.59 \pm 0.79 \pm 0.55}$ $\Gamma(K^{\mp} K^{*}(892)^{\pm} \pi^{+})$ $\frac{VALUE (eV)}{18.6 \pm 6.3 \pm 1.8}$ $\Gamma(K^{\mp} K^{*}(892)^{\pm} \pi^{+})$ $\frac{VALUE (eV)}{VALUE (eV)}$	⁻ π ⁻) × Γ 	$\frac{DOCUMENT}{DOCUMENT}$ $\frac{DOCUMENT}{LEES}$ $(e^+e^-)/\Gamma_{tot}$ $\frac{DOCUMENT}{LEES}$ $\Gamma(e^+e^-)/\Gamma_{t}$ $\frac{DOCUMENT}{LEES}$ $\Gamma(e^+e^-)/\Gamma_{to}$ $DOCUMENT$	btal ID 23 al ID 23 cotal ID 23	<u>TECN</u> BABR BABR <u>TECN</u> BABR	$\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $COMMENT$	$\Gamma_{201}\Gamma_5/\Gamma$ γ_{ISR} hadrons $\Gamma_{202}\Gamma_5/\Gamma$ γ_{ISR} hadrons $\Gamma_{203}\Gamma_5/\Gamma$ γ_{ISR} hadrons $\Gamma_{205}\Gamma_5/\Gamma$
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$\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{+}$ $\frac{VALUE (eV)}{9.45 \pm 3.15 \pm 0.90}$ $\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{0}$ $\frac{VALUE (eV)}{5.59 \pm 0.79 \pm 0.55}$ $\Gamma(K^{\mp} K^{*}(892)^{\pm} \pi^{-})$ $\frac{VALUE (eV)}{18.6 \pm 6.3 \pm 1.8}$ $\Gamma(K^{\mp} K^{*}(892)^{\pm} \pi^{-})$ $\frac{VALUE (eV)}{8.67 \pm 1.56 \pm 0.84}$	⁻ π ⁻) × Γ 	$\frac{DOCUMENT}{DOCUMENT}$ $\frac{DOCUMENT}{LEES}$ $(e^+e^-)/\Gamma_{tot}$ $\frac{DOCUMENT}{LEES}$ $\Gamma(e^+e^-)/\Gamma_{t}$ $\frac{DOCUMENT}{LEES}$ $\Gamma(e^+e^-)/\Gamma_{to}$ $\frac{DOCUMENT}{LEES}$	btal ID 23 al ID 23 cotal ID 23 cotal ID 23 cotal ID 23 cotal ID 23	<u>TECN</u> BABR BABR <u>TECN</u> BABR <u>TECN</u> BABR	$\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$	$ \Gamma_{201} \Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{202} \Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{203} \Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{205} \Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $
$\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{+}$ $\frac{VALUE (eV)}{9.45 \pm 3.15 \pm 0.90}$ $\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{0}$ $\frac{VALUE (eV)}{5.59 \pm 0.79 \pm 0.55}$ $\Gamma(K^{\mp} K^{*}(892)^{\pm} \pi^{-})$ $\frac{VALUE (eV)}{18.6 \pm 6.3 \pm 1.8}$ $\Gamma(K^{\mp} K^{*}(892)^{\pm} \pi^{-})$ $\frac{VALUE (eV)}{8.67 \pm 1.56 \pm 0.84}$ $\Gamma(K^{*}(892)^{\pm} K^{*}(892)^{\pm} K^{*}(892)$	⁻ π ⁻) × Γ 	$\frac{DOCUMENT I}{DOCUMENT I}$ $\frac{DOCUMENT I}{LEES}$ $(e^+e^-)/\Gamma_{tot}$ $\frac{DOCUMENT I}{LEES}$ $\Gamma(e^+e^-)/\Gamma_{t}$ $\frac{DOCUMENT I}{LEES}$ $\Gamma(e^+e^-)/\Gamma_{to}$ $\frac{DOCUMENT I}{LEES}$ $\times \Gamma(e^+e^-)/\Gamma_{t}$	btal 1D 23 al 1D 23 cotal 1D 23 stal 1D 23 stal 1D 23 stal 1D 23	<u>TECN</u> BABR BABR <u>TECN</u> BABR	$\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$	$ \Gamma_{201}\Gamma_{5}/\Gamma \\ \gamma_{ISR} hadrons \\ \Gamma_{202}\Gamma_{5}/\Gamma \\ \gamma_{ISR} hadrons \\ \Gamma_{203}\Gamma_{5}/\Gamma \\ \overline{\gamma_{ISR}} hadrons \\ \Gamma_{205}\Gamma_{5}/\Gamma \\ \overline{\gamma_{ISR}} hadrons \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \Gamma_{20}\Gamma_{5}/\Gamma \\ \Gamma_{20}\Gamma_{5}/\Gamma \\ \Gamma_{20}\Gamma_{5}/\Gamma \\ \Gamma_{20}\Gamma_{5}/\Gamma \\ \Gamma_{20}\Gamma_{5}/\Gamma \\ \Gamma_{20}\Gamma_{5}/\Gamma \\ \Gamma_{20}\Gamma_{5}/\Gamma \\ \Gamma_{20}\Gamma_{5}/\Gamma \\ \Gamma_{20}\Gamma_{5}/\Gamma \\ \Gamma_{20}\Gamma_{5}/\Gamma \\ \Gamma_{20}\Gamma_{5}/\Gamma \\ $
$\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{+}$ $\frac{VALUE (eV)}{9.45 \pm 3.15 \pm 0.90}$ $\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{0}$ $\frac{VALUE (eV)}{5.59 \pm 0.79 \pm 0.55}$ $\Gamma(K^{\mp} K^{*}(892)^{\pm} \pi^{-}$ $\frac{VALUE (eV)}{18.6 \pm 6.3 \pm 1.8}$ $\Gamma(K^{\mp} K^{*}(892)^{\pm} \pi^{0})$ $\frac{VALUE (eV)}{8.67 \pm 1.56 \pm 0.84}$ $\Gamma(K^{*}(892)^{\pm} K^{*}(892)^{\pm} K^{*}(892)^{\pm} K^{*}(892)^{\pm}$	$(\pi^{0}) \times \Gamma$	$\frac{DOCUMENT}{DOCUMENT}$ $\frac{DOCUMENT}{LEES}$ $(e^+ e^-)/\Gamma_{tot}$ $\frac{DOCUMENT}{LEES}$ $\Gamma(e^+ e^-)/\Gamma_{t}$ $\frac{DOCUMENT}{LEES}$ $\Gamma(e^+ e^-)/\Gamma_{to}$ $\frac{DOCUMENT}{LEES}$ $\times \Gamma(e^+ e^-)/\Gamma_{to}$	btal ID 23 al ID 23 cotal ID 23	<u>TECN</u> BABR BABR <u>TECN</u> BABR <u>TECN</u>	$\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$	$\Gamma_{201}\Gamma_5/\Gamma$ γ_{ISR} hadrons $\Gamma_{202}\Gamma_5/\Gamma$ γ_{ISR} hadrons $\Gamma_{203}\Gamma_5/\Gamma$ γ_{ISR} hadrons $\Gamma_{205}\Gamma_5/\Gamma$ γ_{ISR} hadrons $\Gamma_{204}\Gamma_5/\Gamma$
$\Gamma(K_{S}^{0}K^{*}(892)^{0}\pi^{+}$ $\frac{VALUE (eV)}{9.45 \pm 3.15 \pm 0.90}$ $\Gamma(K_{S}^{0}K^{*}(892)^{0}\pi^{0}$ $\frac{VALUE (eV)}{5.59 \pm 0.79 \pm 0.55}$ $\Gamma(K^{\mp}K^{*}(892)^{\pm}\pi^{-})$ $\frac{VALUE (eV)}{18.6 \pm 6.3 \pm 1.8}$ $\Gamma(K^{\mp}K^{*}(892)^{\pm}\pi^{0})$ $\frac{VALUE (eV)}{8.67 \pm 1.56 \pm 0.84}$ $\Gamma(K^{*}(892)^{\pm}K^{*}(892)^{\pm}K^{*}(892)$ $\frac{VALUE (eV)}{26.6 \pm 4.5 \pm 2.7}$	⁻ π ⁻) × Γ π⁰) × Γ +π⁻) × ⁰π⁰) × Γ 92)⁰π[∓])	$\frac{DOCUMENT I}{LEES}$ $\frac{DOCUMENT I}{LEES}$ $(e^+e^-)/\Gamma_{tot}$ $\frac{DOCUMENT I}{LEES}$ $\Gamma(e^+e^-)/\Gamma_{t}$ $\frac{DOCUMENT I}{LEES}$ $\times \Gamma(e^+e^-),$ $\frac{DOCUMENT I}{LEES}$ $\times \Gamma(e^+e^-),$ $\frac{DOCUMENT I}{LEES}$	btal ID 23 al ID 23 iotal ID 23	TECN BABR BABR TECN BABR TECN BABR	$\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$	$ \Gamma_{201} \Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{202} \Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{203} \Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{204} \Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $
$\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{+}$ $\frac{VALUE (eV)}{9.45 \pm 3.15 \pm 0.90}$ $\Gamma(K_{S}^{0} K^{*}(892)^{0} \pi^{0}$ $\frac{VALUE (eV)}{5.59 \pm 0.79 \pm 0.55}$ $\Gamma(K^{\mp} K^{*}(892)^{\pm} \pi^{-}$ $\frac{VALUE (eV)}{18.6 \pm 6.3 \pm 1.8}$ $\Gamma(K^{\mp} K^{*}(892)^{\pm} \pi^{-}$ $\frac{VALUE (eV)}{8.67 \pm 1.56 \pm 0.84}$ $\Gamma(K^{*}(892)^{\pm} K^{*}(892)^{\pm} K^{*}(892)^{\pm} K^{*}(892)^{\pm}$ $\Gamma(K^{*}(892)^{\pm} K^{*}(892)^{\pm} K^{*}(892)^{\pm} K^{*}(892)^{\pm}$	$(\pi^{0}) \times \Gamma$ $(\pi^{0}) \times \Gamma$ $(\pi^{$	$\frac{DOCUMENT I}{LEES}$ $(e^+ e^-)/\Gamma_{tot}$ $\frac{DOCUMENT I}{LEES}$ $\Gamma(e^+ e^-)/\Gamma_{t}$ $\frac{DOCUMENT I}{LEES}$ $\Gamma(e^+ e^-)/\Gamma_{t}$ $\frac{DOCUMENT I}{LEES}$ $\times \Gamma(e^+ e^-),$ $\frac{DOCUMENT I}{LEES}$ $\times \Gamma(e^+ e^-),$ $\frac{DOCUMENT I}{LEES}$ $\times \Gamma(e^+ e^-),$ $\frac{DOCUMENT I}{LEES}$	btal 23 al 1D 23 al 1D 23 cotal 1D 23 ttal 1D 23 ttal 1D 23 ttal 10 23 ttal 23	TECN BABR TECN BABR TECN BABR TECN BABR	$\frac{COMMENT}{e^+ e^- \rightarrow}$	$ \Gamma_{201} \Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{202} \Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{203} \Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{205} \Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{204} \Gamma_5/\Gamma $ $ \gamma_{ISR} hadrons $ $ \Gamma_{204} \Gamma_5/\Gamma $
$\Gamma(K_{S}^{0}K^{*}(892)^{0}\pi^{+}$ $\frac{VALUE (eV)}{9.45 \pm 3.15 \pm 0.90}$ $\Gamma(K_{S}^{0}K^{*}(892)^{0}\pi^{0}$ $\frac{VALUE (eV)}{5.59 \pm 0.79 \pm 0.55}$ $\Gamma(K^{\mp}K^{*}(892)^{\pm}\pi^{-})$ $\frac{VALUE (eV)}{18.6 \pm 6.3 \pm 1.8}$ $\Gamma(K^{\mp}K^{*}(892)^{\pm}\pi^{0})$ $\frac{VALUE (eV)}{8.67 \pm 1.56 \pm 0.84}$ $\Gamma(K^{*}(892)^{\pm}K^{*}(892)$	$(\pi^{0}) \times \Gamma$ $(\pi^{0}) \times \Gamma$	$\frac{P(e^+e^-)}{\Gamma_{tot}}$ $\frac{POCUMENT}{POCUMENT}$ $\frac{POCUMENT}{POCUMENT}$ $\frac{POCUMENT}{POCUMENT}$ $\frac{POCUMENT}{POCUMENT}$ $\frac{POCUMENT}{POCUMENT}$ $\frac{POCUMENT}{POCUMENT}$	btal ID 23 al ID 23 cotal ID 23 tal ID 23 tal ID 23 tal ID 23 tal ID 23 // Ctotal ID 23	TECN BABR BABR TECN BABR TECN BABR	$\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$	$ \Gamma_{201}\Gamma_{5}/\Gamma \\ \gamma_{ISR} hadrons \\ \Gamma_{202}\Gamma_{5}/\Gamma \\ \gamma_{ISR} hadrons \\ \Gamma_{203}\Gamma_{5}/\Gamma \\ \gamma_{ISR} hadrons \\ \Gamma_{205}\Gamma_{5}/\Gamma \\ \gamma_{ISR} hadrons \\ \Gamma_{204}\Gamma_{5}/\Gamma \\ \gamma_{ISR} hadrons \\ \Gamma_{206}\Gamma_{5}/\Gamma \\ $
$\Gamma(K_{S}^{0}K^{*}(892)^{0}\pi^{+}$ $\frac{VALUE (eV)}{9.45 \pm 3.15 \pm 0.90}$ $\Gamma(K_{S}^{0}K^{*}(892)^{0}\pi^{0}$ $\frac{VALUE (eV)}{5.59 \pm 0.79 \pm 0.55}$ $\Gamma(K^{\mp}K^{*}(892)^{\pm}\pi^{-}$ $\frac{VALUE (eV)}{18.6 \pm 6.3 \pm 1.8}$ $\Gamma(K^{\mp}K^{*}(892)^{\pm}\pi^{-}$ $\frac{VALUE (eV)}{8.67 \pm 1.56 \pm 0.84}$ $\Gamma(K^{*}(892)^{\pm}K^{*}(892)^{$	$(\pi^{-}) \times (\pi^{-}) \times (\pi^{-}) \times (\pi^{-}) \times (\pi^{-}) \times (\pi^{-}) \times (\pi^{-}) \times (\pi^{-})$ $(92)^{0} \pi^{\mp})$ $(92)^{-} \pi^{0})$	$\frac{DOCUMENT I}{LEES}$ $\frac{DOCUMENT I}{LEES}$ $(e^+e^-)/\Gamma_{tot}$ $\frac{DOCUMENT I}{LEES}$ $\Gamma(e^+e^-)/\Gamma_{t}$ $\frac{DOCUMENT I}{LEES}$ $\times \Gamma(e^+e^-)/\Gamma_{to}$ $\frac{DOCUMENT I}{LEES}$ $\times \Gamma(e^+e^-)/\Gamma_{t}$ $\frac{DOCUMENT I}{LEES}$ $\times \Gamma(e^+e^-)/\Gamma_{t}$	btal 1D 23 al 1D 23 cotal 1D 23 ctal 1D 23 ctal 1D 23 ctal 1D 23 // Ctotal 1D 23 // Ctotal 1D 23	TECN BABR BABR TECN BABR TECN BABR TECN BABR	$\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$ $\frac{COMMENT}{e^+e^- \rightarrow}$	$\Gamma_{201}\Gamma_5/\Gamma$ γ_{ISR} hadrons $\Gamma_{202}\Gamma_5/\Gamma$ γ_{ISR} hadrons $\Gamma_{203}\Gamma_5/\Gamma$ γ_{ISR} hadrons $\Gamma_{205}\Gamma_5/\Gamma$ γ_{ISR} hadrons $\Gamma_{204}\Gamma_5/\Gamma$ γ_{ISR} hadrons $\Gamma_{206}\Gamma_5/\Gamma$

$\Gamma(K^+K^-\pi^+\pi^-)$	$\times \Gamma(e^+)$	e)/Γ _{total}			Γ ₁₈₅ Γ ₅ /Γ	
VALUE (eV)	<u>EVTS</u> <u>D</u>	OCUMENT ID	TECN	COMMENT		
37.94±0.81±1.10	3.1k L	EES 12F	BABR	$10.6 e^+e^-$	$\tau \rightarrow \pi^+ \pi^- K^+ K^- \gamma$	
• • • We do not use	e the followi	ng data for aver	ages, fits	s, limits, etc	2. ● ● ●	
$36.3 \ \pm 1.3 \ \pm 2.1$	1.5k ¹ A	UBERT 07AK	BABR	$10.6 e^+e^-$	$\tau \rightarrow \pi^+ \pi^- K^+ K^- \gamma$	
$33.6 \pm 2.7 \pm 2.7$	233 ² A	UBERT 05D	BABR	$10.6 \ e^+ e^-$	$T \rightarrow K^+ K^- \pi^+ \pi^- \gamma$	
¹ Superseded by L ² Superseded by A	EES 12F. UBERT 07A	К.				
$\Gamma(K^+K^-\pi^0\pi^0)$	× Г(e ⁺ e ⁻	⁻)/Γ _{total}			Г ₁₈₆ Г ₅ /Г	
VALUE (eV)	EVTS D	OCUMENT ID	TECN	COMMENT		
$11.75 \pm 0.81 \pm 0.90$	388 L	EES 12F	BABR	$10.6 e^+ e^-$	$\tau \rightarrow \pi^0 \pi^0 K^+ K^- \gamma$	
• • • We do not use	e the followi	ng data for aver	ages, fits	s, limits, etc		
13.6 $\pm 1.1 \pm 1.3$	203 ¹ A	UBERT 07AK	BABR	10.6 e ⁺ e ⁻	$\rightarrow \pi^0 \pi^0 K^+ K^- \gamma$	
¹ Superseded by L	EES 12F.					
$\Gamma(K^+K^-\pi^0\pi^0\pi$	⁰) × Γ(<i>e</i> ⁼	[⊢] e [−])/Γ _{total}			Γ187Γ5/Γ	
VALUE (eV))	DOCUMENT I	D	TECN CC	OMMENT	
8.9±1.3±0.9		LEES	23	BABR e [⊣]	$e^- \rightarrow \gamma_{ICD}$ hadrons	
	• • •		-		ISA	
$\Gamma(K_S^0 K^{\pm} \pi^{\mp} \pi^0 \pi$	^{.0}) × Γ(e ⁻	+ e ⁻)/Γ _{total}			Г ₁₈₈ Г ₅ /Г	
VALUE (eV)		DOCUMENT I	D	TECN CC	DMMENT	
29.3±2.6±2.9		LEES	23	BABR e [⊣]	$e^- \rightarrow \gamma_{ISR}$ hadrons	
$\Gamma(K^0 K^{\pm} \pi^{\mp} \pi^{+})$	т [—]) у Г(e ⁺ e [−])/Γ				
VALUE (eV)	.) ^ ! (DOCUMENT I	D	TECN CO	• 189• 5/ • MMENT	
$34.6 \pm 1.4 \pm 1.8$		LEES	23	BABR e ⁻¹	$e^- \rightarrow \gamma_{ICD}$ hadrons	
· · · · · · · · · · · · · · · · · · ·				2/12/1	ISR III III	-
$\Gamma(K_{S}^{0}K_{L}^{0}\pi^{+}\pi^{-})$	× Г(е ⁺ е	⁻)/Γ _{total}			Γ ₁₉₁ Γ ₅ /Γ	
VALUE (eV)	EVTS	DOCUMENT ID	<u>T</u>	ECN COM	MENT	
$20.8 \pm 2.3 \pm 2.1$	248	LEES	14H B	SABR e ⁺ e	$T^- \rightarrow \pi^+ \pi^- K^0_S K^0_L \gamma$	
$\Gamma(K_{S}^{0}K_{I}^{0}\pi^{0}\pi^{0})$	× Г(e ⁺ e ⁻	-)/Γ _{total}			Γ ₁₉₂ Γ ₅ /Γ	
VALUE (eV)	EVTS	DOCUMENT ID		TECN CON	IMENT	
10.3±2.3±0.5	47	LEES	17A	BABR e ⁺	$e^- \rightarrow \kappa^0_S \kappa^0_L \pi^0 \pi^0 \gamma$	
$\Gamma(K^0_S K^0_I \eta) \times \Gamma$	(e ⁺ e ⁻)/Г	total			Г ₁₉₃ Г ₅ /Г	
VALUE (eV)	EVTS	DOCUMENT	ID	TECN C	COMMENT	
8.0±1.8±0.4	45	LEES	17A	A BABR e	$e^+e^- \rightarrow \kappa^0_S \kappa^0_L \eta \gamma$	
$\Gamma(K^0_{S}K^0_{S}\pi^+\pi^-)$	× Г(e ⁺ е	⁻)/Γ _{total}			Γ194Γ5/Γ	
VALUE (eV)	EVTS	DOCUMENT ID	<u></u>	ECN COM	MENT	
9.3±0.9±0.5	133	LEES	14н В	ABR e ⁺ e	$^{-} \rightarrow \pi^{+}\pi^{-}K^{0}_{S}K^{0}_{S}\gamma$	
$\Gamma(K^{\mp}K_{c}^{0}\pi^{\pm}\pi^{0})$	× Г(e ⁺ e	⁻)/Γ _{total}			Γ105Γ5/Γ	
VALUE (eV)	EVTS	DOCUMENT ID	Т	ECN COM	199- 97- MENT	
31.7±1.9±1.8	393	LEES	17D B	SABR e^+e	$- \rightarrow K^0_c K^{\pm} \pi^{\mp} \pi^0 \gamma$	
		-			5	
https://pdg.lbl.go	ov.	Page 26		Created	d: 4/29/2024 18:57	

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Citation: R.L. Workman et al. (Particle Data Group), Prog. Theor. Exp. Phys. 2022, 083C01 (2022) and 2023 update

$\Gamma(K^0_S K^{\pm} \rho(770))$	$(e^{\pm}\pi^{0}) \times \Gamma(e^{\pm}\pi^{0})$	e ⁺ e ⁻)/Γ _{tc}	otal			Г ₁₉₀ Г ₅ /Г
VALUE (eV)		DOCUMENT	- ID	TECN	COMMENT	Г
$16.0 \pm 4.1 \pm 1.6$		LEES	23	BAB	R e ⁺ e ⁻ -	$ ightarrow \gamma_{ISR}$ hadrons
$\Gamma(K^+K^-2(\pi^+)$	π ⁻)) × Γ(e ⁺	[⊢] e [−])/Γ _{tot}	al			Г ₁₉₇ Г ₅ /Г
VALUE (10^{-2} keV)	EVTS	DOCUMEN	IT ID	TEC	COMMEN	VT
2.75±0.23±0.17	205	AUBERT	- 0	6d BAE	3R 10.6 e ⁺ K ⁺	$K^{e} \rightarrow K^{e} \gamma \gamma (\pi^{+} \pi^{-}) \gamma$
$\Gamma(K^+K^-\pi^+\pi^-$	⁻ η) × Γ(e ⁺ α	е [—])/Г _{total}	TECN	COMME	ĪNT	Г ₁₉₈ Г ₅ /Г
25.9±3.9±0.1	73 ¹ AUBER	RT 07AU	BABR	10.6 e	$^+e^- \rightarrow K^-$	$+ \kappa^{-} \pi^{+} \pi^{-} \eta \gamma$
1 AUBERT 07AU Γ_{total}] × [B(η 2γ) = (39.36 = error is the sys	reports $[\Gamma(J/\psi \rightarrow 2\gamma)] = 10.2$ $(\pm 0.18) \times 10^{-2}$. tematic error from	${\cal K}^{(1S)} ightarrow {\cal K}^{(1S)} {\cal K}^{(1S)} {\cal K}^{(2S)} {\cal K}$	$+ K^{-} \pi^{-}$ s eV which fror is the from the st value of t	$+ \pi^{-} \eta$) ch we div eir exper llue.	$ imes \ {\sf \Gamma}ig(J/\psi(1$ vide by our b iment's erro	$(S) ightarrow e^+ e^-)/$ lest value B $(\eta ightarrow$ r and our second
Γ(2(K⁺K⁻)) >	< Г(е ⁺ е ⁻)/I	total DOCUMENT	ID T	ECN C	OMMENT	Г ₁₉₉ Г ₅ /Г
4.00±0.33±0.29 • • • We do not u	287 ± 24 use the following	LEES g data for av	12F E erages, f	BABR 1 fits, limit	0.6 e ⁺ e [−] - s, etc. • • •	$\rightarrow 2(K^+K^-)\gamma$
$\begin{array}{c} 4.11 \pm 0.39 \pm 0.30 \\ 4.0 \ \pm 0.7 \ \pm 0.6 \end{array}$	$\begin{array}{ccc} 156\pm15 & 1\\ & 38 & 2 \end{array}$	AUBERT AUBERT	07ak E 05d E	BABR 1 BABR 1	0.6 e ⁺ e ⁻ - 0.6 e ⁺ e ⁻ -	$ \rightarrow 2(K^+ K^-) \gamma \rightarrow 2(K^+ K^-) \gamma $
¹ Superseded by ² Superseded by	LEES 12F. AUBERT 07AK.					
Γ(K+K-K⁰_SK VALUE (eV)	<mark>в) × Г(е+е</mark>	-)/Γ_{total}	7	ECN C	OMMENT	Г ₂₀₀ Г ₅ /Г
$2.3 {\pm} 0.4 {\pm} 0.1$	29 LE	ES	14H E	BABR e	$^+e^- \rightarrow K$	$S^{0} \kappa^{0}_{S} \kappa^{+} \kappa^{-} \gamma$
Γ(<i>p</i> p) × Γ(<i>e</i> ⁺	e)/Γ _{total}	DOCUMEN	IT ID	<u>TEC</u>	N <u>COMMEN</u>	Γ ₂₀₇ Γ ₅ /Γ
11.9 ± 0.6 OUR AV	ERAGE Error	includes sca	le facto	r of 1.8.	See the ideo	ogram below.
$11.3 \pm 0.4 \pm 0.3$	821	¹ LEES	1	30 BAE	$R e^+e^-$	$\rightarrow p \overline{p} \gamma$
$12.9 \pm 0.4 \pm 0.4$	918	² LEES	1	3Y BAE	3R e⊤e⁻·	$\rightarrow p \overline{p} \gamma$
9.7 ± 1.7	ico tho following	YARMSTH	KONG 9	3B E76	$p p \rightarrow p p \rightarrow p p \rightarrow p p \rightarrow p p p p p p p p$	e'e
• • • we do not t	ise the following		erages,	its, iimit		•
$12.0\pm0.6\pm0.5$	438	⁺ AUBERT	0	6B BAE	3R e ⁺ e ⁻	$\rightarrow p \overline{p} \gamma$
¹ ISR photon rec	onstructed in th	ne detector				
⁻ ISR photon un	detected	,				
⁹ Using F _{total} =	85.5 – 5.8 Me	/.				

⁴ Superseded by LEES 130

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$J/\psi(1S)$ BRANCHING RATIOS

For the first four branching ratios, see also the partial widths, and (partial widths) $\times \Gamma(e^+e^-)/\Gamma_{total}$ above.

Γ(hadrons)/Γ _{total}				Γ	<u>1</u> /Γ
VALUE	DOCUMENT ID		TECN	COMMENT	
0.877 ± 0.005 OUR AVERAGE					
0.878 ± 0.005	BAI	95 B	BES	e ⁺ e ⁻	
0.86 ± 0.02	BOYARSKI	75	MRK1	e ⁺ e ⁻	
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$\Gamma(\text{virtual}\gamma \rightarrow \text{hadrons})/\Gamma_{t}$	otal			Г2/	Έ
VALUE	DOCUMENT ID		TECN	COMMENT	
0.1346±0.0007	¹ LIAO	23	RVUE	e^+e^-	
$\bullet~\bullet~$ We do not use the follow	wing data for average	es, fits,	limits, e	etc. • • •	
0.135 ± 0.003	^{2,3} SETH	04	RVUE	e ⁺ e ⁻	
0.17 ± 0.02	² BOYARSKI	75	MRK1	e^+e^-	
¹ Using B($J/\psi(1S) \rightarrow \ell^+ \ell$ a fit to data from Mark-I, I	$^{-}) = (5.967 \pm 0.023)$ DM2, BESII, KEDR,	3)% an and B	d <i>R</i> = 2 ESIII.	.26 \pm 0.01 determined l	by

² Included in $\Gamma(hadrons)/\Gamma_{total}$.

³Using B($J/\psi \rightarrow \ell^+ \ell^-$) = (5.90 ± 0.09)% from RPP-2002 and R = 2.28 ± 0.04 determined by a fit to data from BAI 00 and BAI 02C. Superseded by LIAO 23.

$\Gamma(ggg)/\Gamma_{total}$

Γ₃/Γ

Γ₄/Γ

VALUE (units 10^{-2})	EVTS	DOCUMENT ID)	TECN	COMMENT	
64.1±1.0	6 M	¹ BESSON	08	CLEO	$\overline{\psi(2S)} \rightarrow \pi^+\pi^- + hac$	Irons
1 Calculated usin	ig the va	lue $\Gamma(\gamma g g)/\Gamma(g g)$	g) =	$0.137~\pm$	$0.001\pm0.016\pm0.004$	from
RESSON 08 an	d the DD	C 08 values of B($\rho + \rho - \gamma$	P(virtu	A = (A + A)	(m)

BESSON 08 and the PDG 08 values of B($\ell^+ \ell^-$), B(virtual γo hadrons), and B($\gamma \eta_c$). The statistical error is negligible and the systematic error is partially correlated with that of $\Gamma(\gamma g g)/\Gamma_{\text{total}}$ measurement of BESSON 08.

$\Gamma(\gamma g g) / \Gamma_{\text{total}}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
8.79±1.05	200 k	¹ BESSON	08	CLEO	$\psi(2S) \rightarrow \pi^+ \pi^- \gamma + \text{hadrons}$

¹Calculated using the value $\Gamma(\gamma gg)/\Gamma(ggg) = 0.137 \pm 0.001 \pm 0.016 \pm 0.004$ from BESSON 08 and the value of $\Gamma(ggg)/\Gamma_{total}$. The statistical error is negligible and the systematic error is partially correlated with that of $\Gamma(ggg)/\Gamma_{total}$ measurement of DEFECCH 202 BESSON 08.

$\Gamma(\gamma g g) / \Gamma(g g g)$					Γ ₄ /Γ ₃
VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
$13.7 \pm 0.1 \pm 0.7$	6 M	BESSON	08	CLEO	$\psi(2S) \rightarrow \pi^+ \pi^- J/\psi$
$\Gamma(e^+e^-)/\Gamma_{total}$					Г ₅ /Г
VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
5.971±0.032 OUR AVE	RAGE				
$5.983 \!\pm\! 0.007 \!\pm\! 0.037$	720k	ABLIKIM	13R	BES3	$\psi(2S) \rightarrow J/\psi \pi^+ \pi^-$
$5.945\!\pm\!0.067\!\pm\!0.042$	15k	LI	05 C	CLEO	$\psi(2S) \rightarrow J/\psi \pi^+ \pi^-$
$5.90\ \pm 0.05\ \pm 0.10$		BAI	98 D	BES	$\psi(2S) \rightarrow J/\psi \pi^+ \pi^-$
6.09 ± 0.33		BAI	95 B	BES	e ⁺ e ⁻
$5.92\ \pm 0.15\ \pm 0.20$		COFFMAN	92	MRK3	$\psi(2S) \rightarrow J/\psi \pi^+ \pi^-$
6.9 ±0.9		BOYARSKI	75	MRK1	e ⁺ e ⁻
$\Gamma(e^+e^-\gamma)/\Gamma_{ ext{total}}$					Г ₆ /Г
VALUE (units 10^{-3})		DOCUMENT ID		TECN	COMMENT
$8.8 {\pm} 1.3 {\pm} 0.4$		¹ ARMSTRONG	96	E760	$\overline{p}p \rightarrow e^+ e^- \gamma$
1 For $E_\gamma~>100$ MeV	/ .				

Citation: R.L. Workman et al. (Particle Data Group), Prog.Theor.Exp.Phys. 2022, 083C01 (2022) and 2023 update

$\Gamma(\mu^+\mu^-)/\Gamma_{total}$						Г ₇ /Г
VALUE (units 10^{-2})	EVTS	DOCUM	IENT I	ID	TECN	COMMENT
5.961 ± 0.033 OUR AVE	RAGE					
$5.973\!\pm\!0.007\!\pm\!0.038$	770k	ABLIK	IM	13 R	BES3	$\psi(2S) \rightarrow J/\psi \pi^+ \pi^-$
$5.960\!\pm\!0.065\!\pm\!0.050$	17k	LI		05 C	CLEO	$\psi(2S) \rightarrow J/\psi \pi^+ \pi^-$
$5.84\ \pm 0.06\ \pm 0.10$		BAI		98 D	BES	$\psi(2S) \rightarrow J/\psi \pi^+ \pi^-$
6.08 ± 0.33		BAI		95 B	BES	e ⁺ e ⁻
$5.90\ \pm 0.15\ \pm 0.19$		COFFI	MAN	92	MRK3	$\psi(2S) \rightarrow J/\psi \pi^+ \pi^-$
6.9 ± 0.9		BOYA	RSKI	75	MRK1	e^+e^-
$\Gamma(e^+e^-)/\Gamma(\mu^+\mu^-)$	DOC	UMENT ID		TECN	COMMEI	Г5/Г7
1.0016±0.0031 OUR A	/ERAGE				00111121	••
$1.0022 \pm 0.0044 \pm 0.0048$	1 AUI	CHENKO	14	KEDR	3.097 e	$^+e^- \rightarrow e^+e^-, \mu^+\mu^-$
$1.0017 \pm 0.0017 \pm 0.0033$	² ABI	IKIM	13R	BES3	$\psi(2S)$ -	$\rightarrow J/\psi \pi^+ \pi^-$
$1.002 \ \pm 0.021 \ \pm 0.013$	³ AN/	ASHIN	10	KEDR	3.097 e	$+e^- \rightarrow e^+e^-, \mu^+\mu^-$
$0.997\ \pm 0.012\ \pm 0.006$	LI		05 C	CLEO	$\psi(2S)$ -	$\rightarrow J/\psi \pi^+ \pi^-$
$\bullet \bullet \bullet$ We do not use the	e followin	g data for	avera	ges, fits,	limits, e	etc. • • •
$1.011 \pm 0.013 \pm 0.016$	BAI		98 D	BES	$\psi(2S)$ -	$\rightarrow J/\psi \pi^+ \pi^-$
1.00 ± 0.07	BAI		95 B	BES	e ⁺ e ⁻	
1.00 ± 0.05	BO	YARSKI	75	MRK1	e^+e^-	
0.91 ± 0.15	ESF	OSITO	75 B	FRAM	e^+e^-	
0.93 ± 0.10	FOF	RD	75	SPEC	e^+e^-	
¹ From 235.3k $J/\psi \rightarrow$ ² Not independent of mu-)/ Γ_{total} . ³ Not independent of t	e^+e^- the corre	and 156.61 esponding	< J/ψ measi ieasur	$p \rightarrow \mu^+$ urements	μ^- obsets of $\Gamma(ext{e}^+$ of $\Gamma(ext{e}^+)$	erved events. + e-)/ $\Gamma_{ m total}$ and $\Gamma(m mu+e^-)$ $ imes$ $\Gamma(e^+e^-)/\Gamma_{ m total}$

and $\Gamma(\mu^+\mu^-) \times \Gamma(e^+e^-)/\Gamma_{\text{total}}$.

- HADRONIC DECAYS -

Γ(ρ	$\pi)/\Gamma_{ ext{total}}$					Г ₈ /Г
VALU	<i>E</i> (units 10 ⁻²)	EVTS	DOCUMENT ID		TECN	COMMENT
1.88	± 0.12 OUR AV	ERAGE	Error includes scale	e facto	or of 2.6.	See the ideogram below.
2.072	$2\pm 0.017\pm 0.062$	19.8k	¹ ANASHIN	23	KEDR	$e^+ e^- \rightarrow J/\psi \rightarrow$
						$\pi + \pi - \pi^{0}$
2.18	± 0.19		^{2,3} AUBERT,B	04N	BABR	10.6 $e^+e^- \rightarrow$
2.184	$4\pm 0.005\pm 0.201$	220k	^{3,4} BAI	04н	BES	$a^+ a^- \pi^0 \gamma$ $e^+ e^- \rightarrow J/\psi \rightarrow$
2 001	$1 \pm 0.021 \pm 0.116$		3.5 dai	0411	DEC	$\pi^{+}\pi^{-}\pi^{0}$
2.091	$1\pm0.021\pm0.110$		-)- DAI	048	DES	$\psi(23) \rightarrow \pi + \pi J/\psi$
1.21	± 0.20		BAI	96 D	BES	$e^+e^- \rightarrow ho\pi$
1.42	$\pm 0.01 \ \pm 0.19$		COFFMAN	88	MRK3	e ⁺ e ⁻
1.3	± 0.3	150	FRANKLIN	83	MRK2	e ⁺ e ⁻
1.6	± 0.4	183	ALEXANDER	78	PLUT	e ⁺ e ⁻
1.33	± 0.21		BRANDELIK	78 B	DASP	e ⁺ e ⁻
1.0	± 0.2	543	BARTEL	76	CNTR	e ⁺ e ⁻

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 $1.3 \pm 0.3 $

JEAN-MARIE 76 MRK1 e^+e^-

¹ By a simultaneous fit of the $\pi\pi$ invariant mass distribution over the decay modes $J/\psi \rightarrow \rho^0 \pi^0$, $J/\psi \rightarrow \rho^+ \pi^-$, $J/\psi \rightarrow \rho^- \pi^+$. In the fit only the intermediate states $\rho(770)\pi$ and $\rho(1450)\pi$ are considered.

²/₂ From the ratio of $\Gamma(e^+e^-) \ B(\pi^+\pi^-\pi^0)$ and $\Gamma(e^+e^-) \ B(\mu^+\mu^-)$ (AUBERT 04).

³Not independent of their B($\pi^+\pi^-\pi^0$).

⁴ From $J/\psi \rightarrow \pi^+ \pi^- \pi^0$ events directly.

⁵ Obtained comparing the rates for $\pi^+ \pi^- \pi^0$ and $\mu^+ \mu^-$, using J/ψ events produced via $\psi(2S) \rightarrow \pi^+ \pi^- J/\psi$ and with $B(J/\psi \rightarrow \mu^+ \mu^-) = 5.88 \pm 0.10\%$.



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$\Gamma(\rho^+ K^+ K^- \pi^-)$	$+ c.c \rightarrow K$	$(+\kappa^{-}\pi^{+}\pi^{-}\pi^{0})/\Gamma_{\text{total}}$	Г ₂₅ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID TECN COMMENT	
$3.53 {\pm} 0.16 {\pm} 0.81$	485	ANASHIN 22 KEDR $J/\psi \rightarrow K^+ K^- \tau$	$\pi^+\pi^-\pi^0$
$\Gamma(a_2(1320)^0\pi^+\pi)$	$r^- ightarrow 2(\pi^+)$	$(\pi^{-})\pi^{0})/\Gamma_{total}$	Г ₁₀ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID TECN COMMENT	
$2.84 \pm 0.08 \pm 0.60$	1317	ANASHIN 22 KEDR $J/\psi ightarrow 2(\pi^+)$	$\pi^{-})\pi^{0}$
Γ(a ₂ (1320) ⁺ π ⁻	$\pi^0 + c.c \rightarrow$	$2(\pi^+\pi^-)\pi^0)/\Gamma_{ m total}$	Γ_{11}/Γ
VALUE (units 10^{-3})	EVTS	DOCUMENT ID TECN COMMENT	
3.67±0.09±0.73	1628	ANASHIN 22 KEDR $J/\psi ightarrow 2(\pi^+)$	$\pi^{-})\pi^{0}$
$\Gamma(a_2(1320)\rho)/\Gamma_1$	otal		Γ ₁₂ /Γ
<u>VALUE (units 10^{-3})</u>	<u>EVTS</u>	DOCUMENT ID TECN COMMENT	
10.9 ± 2.2 OUR AVE		ALCUSTINE OF DAGE $U_{1} \rightarrow 0^{+}$	Ŧ
$11.7 \pm 0.7 \pm 2.5$ 8 4 ± 4.5	7584 36	AUGUSTIN 89 DM2 $J/\psi \rightarrow \rho^{2} \rho^{+} \pi$	0
$\Gamma(\eta \pi^+ \pi^-)/\Gamma_{\text{tot}}$	30	VANNOCCI II WIXKI $e^{-e} = -\frac{1}{2}(\pi^{-1})$	Γ ₁₃ /Γ
VALUE (units 10^{-4})	EVTS	DOCUMENT ID TECN COMMENT	
3.78±0.68	471 1	ABLIKIM 190 BES3 $e^+e^- \rightarrow J/\psi \rightarrow I/\psi$	$n\pi^+\pi^-$
¹ Erom on energy	uscan of e ⁺	$e^- \rightarrow 1/\psi \rightarrow n\pi^+\pi^-$ assuming PDC 16	values for
$\Gamma(e^+e^-), \Gamma(\mu^+)$	$^{-}\mu^{-}$), and Γ	f(total).	values for
$\Gamma(\eta ho) / \Gamma_{total}$			Г ₁₄ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID TECN COMMENT	
0.193±0.023 OUR	AVERAGE		
$0.194 \pm 0.017 \pm 0.02$	9 299	JOUSSET 90 DM2 $J/\psi \rightarrow$ hadro	ns
$0.193 \pm 0.013 \pm 0.02$	9	COFFMAN 88 MRK3 $e e \rightarrow \pi^+$	π η
$\Gamma(\eta \phi(2170) \rightarrow \eta$	φ f₀(980) -	$ ightarrow \eta \phi \pi^+ \pi^-) / \Gamma_{total}$	Г ₁₇ /Г
VALUE (units 10 ⁻⁴)	<u>EVTS</u>	DOCUMENT ID TECN COMMENT	
$1.20 \pm 0.14 \pm 0.37$	471	ABLIKIM 15H BES3 $e^+e^- ightarrow J/\psi ightarrow q$	$\delta\eta\pi^+\pi^-$
$\Gamma(\eta\phi(2170) \rightarrow \eta)$	K*(892) ⁰	Κ *(892) ⁰)/Γ _{total}	Г ₁₈ /Г
<2.52 × 10 ⁻⁴	<u>90</u>	ABLIKIM 10C BES2 $J/\psi \rightarrow nK^+\pi^-$	$K^{-}\pi^{+}$
	50		
$\Gamma(\eta K^{\pm} K^{0}_{S} \pi^{\mp})/$	Γ _{total}		Г ₂₀ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID TECN COMMENT	
$21.8 \pm 2.2 \pm 3.4$	232 ± 23	ABLIKIM 08E BES2 $e^+e^- \rightarrow J/\psi$,
Γ(η <i>K</i> *(892) ⁰ <i>K</i> *	(892) ⁰)/Γ ₁	total	Γ ₂₁ /Γ
VALUE (units 10^{-3})	EVTS	DOCUMENT ID TECN COMMENT	
$1.15 {\pm} 0.13 {\pm} 0.22$	209	ABLIKIM 10C BES2 $J/\psi \rightarrow \eta K^+ \pi^-$	$K^{-}\pi^{+}$

						Г ₂₂ /Г
VALUE (units 10 ⁻³)	EVTS	DOCUMENT ID		TECN	COMMENT	
8.1 \pm 0.8 OUR AVER	RAGE E	rror includes scale	factor	of 1.6.		
$7.90\!\pm\!0.19\!\pm\!0.49$	3476	¹ ABLIKIM	17AK	BES3	$J/\psi \rightarrow \pi^+$	$\pi^{-}\eta^{\prime}$
$8.3 \pm 3.0 \pm 1.2$	19	JOUSSET	90	DM2	$J/\psi \rightarrow ha$	drons
11.4 \pm 1.4 \pm 1.6		COFFMAN	88	MRK3	$J/\psi \rightarrow \pi^{\neg}$	$\pi^{-}\eta^{\prime}$
¹ From a partial wave	e analysis	of the decay J/ψ -	$\rightarrow \pi^+$	$\pi^-\eta'$.		
$\Gamma(\rho(1450)\pi \rightarrow \pi^+\pi)$	r [−] π ⁰)/Γ	total				Г ₃₀ /Г
VALUE (units 10^{-4}) EVTS	<u>5 DC</u>	OCUMENT ID	TECN	COMN	1ENT	
2.2±0.2±1.1 19.8k	¹ AI	NASHIN 23	KEDF	R e ⁺ e [−]	$^- \rightarrow J/\psi -$	$\rightarrow \pi^+\pi^-\pi^0$
1 By a simultaneous fi $ ho^0 \pi^0$, $J/\psi o ho^+ \pi^0$ and $ ho(1450)\pi$ are contracted on the second sec	it of the π π^- , J/ψ onsidered	π invariant mass d $\rightarrow \rho^{-}\pi^{+}$. In the	istribu fit only	tion ove y the int	r the decay m ermediate sta	odes $J/\psi ightarrow$ ates $ ho$ (770) π
$\Gamma(\rho(1450)\pi \rightarrow \pi^+\pi)$	r [−] π ⁰)/Γ	$(\pi^{+}\pi^{-}\pi^{0})$				Γ ₃₀ /Γ ₁₆₃
VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT	
• • • We do not use th	ne followin	ng data for average	es, fits,	limits, e	etc. • • •	
$10.9 \pm 1.7 \pm 2.7$	20k	¹ LEES	17C	BABR	$J/\psi \rightarrow \pi^+$	$-\pi - \pi^{0}$
0.80 ± 0.27	20k	² LEES	17C	BABR	$J/\psi \rightarrow \pi^+$	$\pi - \pi^0$
² From a Dalitz plot a $\Gamma(\rho(1450)^{\pm}\pi^{\mp} \rightarrow I$	analysis in K℃K [±] π	i a Veneziano mod ∓) /Γ(K⁰cK[±]π ⁱ	el. ∓)			Fay /Faa
VALUE(0/)	EVITS		,	TECN	COMMENT	· 31/ · 181
VALUE (%)	EVTS	DOCUMENT ID	170	<u>TECN</u>		'31/'181
VALUE (%) 6.3±0.8±0.6	<u>EVTS</u> 4k	DOCUMENT ID	1 7c	<u>tecn</u> BABR	$\frac{COMMENT}{J/\psi} ightarrow K_{2}^{0}$	$\frac{1}{5} \frac{31}{5} \frac{181}{5}$
VALUE (%) 6.3±0.8±0.6 ¹ From a Dalitz plot a	<u>EVTS</u> 4k analysis in	DOCUMENT ID 1 LEES an isobar model.	1 7c	<u>tecn</u> BABR	$\frac{COMMENT}{J/\psi ightarrow \kappa_{2}^{0}}$	$\frac{131}{5} \kappa^{\pm} \pi^{\mp}$
$\frac{VALUE(\%)}{6.3\pm0.8\pm0.6}$ ¹ From a Dalitz plot a $\Gamma(\rho(1450)^0 \pi^0 \rightarrow K)$	<u>EVTS</u> 4k analysis in + K⁻ π⁰	$\frac{DOCUMENT ID}{1 \text{ LEES}}$ an isobar model. $D/\Gamma(K^+K^-\pi^0)$, 17c	<u>tecn</u> BABR	$\frac{COMMENT}{J/\psi ightarrow K_{2}^{0}}$	⁰ ₅ K [±] π [∓]
$\frac{VALUE(\%)}{6.3\pm0.8\pm0.6}$ ¹ From a Dalitz plot a $\Gamma(\rho(1450)^0 \pi^0 \rightarrow K)$ VALUE(\%)	$\frac{EVTS}{4k}$ analysis in $+ K^{-} \pi^{0}$ $EVTS$	$\frac{DOCUMENT ID}{1 \text{ LEES}}$ an isobar model. $D/\Gamma(K^+K^-\pi^0)$ <u>DOCUMENT ID</u>	, 17c	<u>TECN</u> BABR	$rac{COMMENT}{J/\psi ightarrow K_{2}^{0}}$	⁻ 31/- 181 ⁻ ₂ κ [±] π [∓] Γ ₃₂ /Γ ₁₈₀
$\frac{VALUE(\%)}{6.3\pm0.8\pm0.6}$ ¹ From a Dalitz plot a $\Gamma(\rho(1450)^0 \pi^0 \rightarrow K)$ $\frac{VALUE(\%)}{9.3\pm2.0\pm0.6}$	<u>EVTS</u> 4k analysis in + K⁻ π⁰ <u>EVTS</u> 2k	$\frac{DOCUMENT ID}{1 \text{ LEES}}$ 1 an isobar model. D/ $\Gamma(K^+K^-\pi^0)$ $\frac{DOCUMENT ID}{1 \text{ LEES}}$) 17c	<u>TECN</u> BABR <u>TECN</u> BABR	$\frac{COMMENT}{J/\psi \rightarrow K_{2}^{COMMENT}}$ $\frac{COMMENT}{J/\psi \rightarrow K^{-1}}$	¹ 31/1181 ² ⁵ κ [±] π [∓] Γ₃₂/Γ₁₈₀ ⁺ κ ⁻ π ⁰
VALUE (%) 6.3±0.8±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)^0 \pi^0 \rightarrow K)$ VALUE (%) 9.3±2.0±0.6 ¹ From a Dalitz plot a	<u>EVTS</u> 4k analysis in + K⁻ π⁰ <u>EVTS</u> 2k analysis in	$\frac{DOCUMENT ID}{1 \text{ LEES}}$ 1 an isobar model. D)/ Г (K ⁺ K ⁻ π ⁰) <u>DOCUMENT ID</u> 1 LEES 1 an isobar model.) 17c) 17c	<u>TECN</u> BABR <u>TECN</u> BABR	$\frac{COMMENT}{J/\psi \rightarrow K_{2}^{COMMENT}}$ $\frac{COMMENT}{J/\psi \rightarrow K^{-1}}$	² 5 κ[±] π[∓] Γ₃₂/Γ₁₈₀
<u>VALUE (%)</u> 6.3±0.8±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)^0 \pi^0 \rightarrow K^0)$ <u>VALUE (%)</u> 9.3±2.0±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)\eta'(958) \rightarrow K^0)$	$\frac{EVTS}{4k}$ analysis in $\frac{K}{K} - \pi^{0}$ $\frac{EVTS}{2k}$ analysis in $\frac{\pi}{K} - \pi^{-} \pi^{-}$	$\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{D}{\Gamma(K^+ K^- \pi^0)}$ $\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{\eta'(958)}{\Gamma_{total}}/\Gamma_{total}$) 17c) 17c	<u>TECN</u> BABR <u>TECN</u> BABR	$\frac{COMMENT}{J/\psi \rightarrow K_{2}^{COMMENT}}$ $\frac{COMMENT}{J/\psi \rightarrow K^{-1}}$	⁻ 31/ ⁻ 181
<u>VALUE (%)</u> 6.3±0.8±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)^0 \pi^0 \rightarrow K')$ <u>VALUE (%)</u> 9.3±2.0±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)\eta'(958) \rightarrow K')$ <u>VALUE (units 10⁻⁶)</u>	$\frac{EVTS}{4k}$ analysis in $\frac{FVTS}{2k}$ analysis in $\frac{EVTS}{2k}$ $\frac{FVTS}{2k}$ $\frac{FVTS}{2k}$ $\frac{FVTS}{2k}$	$\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{D}{\Gamma(K^+ K^- \pi^0)}$ $\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{\eta'(958)}{\Gamma_{total}}$) 17c) 17c	<u>TECN</u> BABR <u>TECN</u> BABR	$\frac{COMMENT}{J/\psi \rightarrow K_{2}^{COMMENT}}$ $\frac{COMMENT}{J/\psi \rightarrow K^{-1}}$ $COMMENT$	² ³ ³ ⁵ ^{κ±} π [∓] Γ ³² /Γ ₁₈₀ ⁺ ^{κ-} π ⁰ Γ ³³ /Γ
<u>VALUE (%)</u> 6.3±0.8±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)^0 \pi^0 \rightarrow K')$ <u>VALUE (%)</u> 9.3±2.0±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)\eta'(958) \rightarrow K')$ <u>VALUE (units 10⁻⁶)</u> 3.28±0.55±0.44	$\frac{EVTS}{4k}$ analysis in $\frac{EVTS}{2k}$ analysis in $\frac{EVTS}{2k}$ $\frac{\pi^{+}\pi^{-}}{\pi^{-}}$ $\frac{EVTS}{119}$	$\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{D}{\Gamma(K^+ K^- \pi^0)}$ $\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{\eta'(958)}{\Gamma_{total}}/\Gamma_{total}$ $\frac{DOCUMENT \ ID}{1 \ ABLIKIM}$) 17c) 17c	TECN BABR TECN BABR	$\frac{COMMENT}{J/\psi \rightarrow K_{2}^{COMMENT}}$ $\frac{COMMENT}{J/\psi \rightarrow K^{-1}}$ $\frac{COMMENT}{J/\psi \rightarrow \pi^{+1}}$	$ \frac{\mathbf{F}_{31}^{+} \mathbf{F}_{181}}{\mathbf{F}_{32}^{-} \mathbf{F}_{180}} $ $ \frac{\mathbf{F}_{32}^{-} \mathbf{F}_{180}}{\mathbf{F}_{33}^{-} \mathbf{F}_{33}^{-} \mathbf{F}_{33$
<u>VALUE (%)</u> 6.3±0.8±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)^0 \pi^0 \rightarrow K')$ <u>VALUE (%)</u> 9.3±2.0±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)\eta'(958) \rightarrow K')$ <u>VALUE (units 10⁻⁶)</u> 3.28±0.55±0.44 ¹ From a partial wave	$\frac{EVTS}{4k}$ analysis in $+ K^{-} \pi^{0}$ $\frac{EVTS}{2k}$ analysis in $\Rightarrow \pi^{+} \pi^{-}$ $\frac{EVTS}{119}$ analysis	$\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{D}{\Gamma(K^+ K^- \pi^0)}$ $\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{\eta'(958)}{\Gamma_{total}}/\Gamma_{total}$ $\frac{DOCUMENT \ ID}{1 \ ABLIKIM}$ of the decay J/ψ) 17c) 17c 17aκ → π ⁺	$\frac{TECN}{BABR}$ $\frac{TECN}{BABR}$ $\frac{TECN}{BES3}$ $\pi^{-}\eta'.$	$\frac{COMMENT}{J/\psi \rightarrow K_{2}}$ $\frac{COMMENT}{J/\psi \rightarrow K^{-1}}$ $\frac{COMMENT}{J/\psi \rightarrow \pi^{+1}}$	$ \frac{\mathbf{F}_{31}^{+} \mathbf{F}_{181}}{\mathbf{F}_{32}^{-} \mathbf{F}_{180}} $ $ \frac{\mathbf{F}_{32}^{-} \mathbf{F}_{180}}{\mathbf{F}_{33}^{-} \mathbf{F}_{33}^{-} \mathbf{F}_{33$
<u>VALUE (%)</u> 6.3±0.8±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)^0 \pi^0 \rightarrow K')$ <u>VALUE (%)</u> 9.3±2.0±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450) \eta'(958) \rightarrow K')$ <u>VALUE (units 10⁻⁶)</u> 3.28±0.55±0.44 ¹ From a partial wave $\Gamma(\rho(1700) \pi \rightarrow \pi^+ \pi)$	$\frac{EVTS}{4k}$ analysis in $+ K^{-} \pi^{0}$ $\frac{EVTS}{2k}$ analysis in $+ \pi^{-} \pi^{0}$ $\frac{EVTS}{119}$ $= analysis$	$\frac{DOCUMENT \ ID}{1 \ LEES}$ an isobar model. $D/\Gamma(K^+K^-\pi^0)$ $\frac{DOCUMENT \ ID}{1 \ LEES}$ an isobar model. $\eta'(958))/\Gamma_{total}$ $\frac{DOCUMENT \ ID}{1 \ ABLIKIM}$ of the decay J/ψ .) 17c) 17c 17AK → π ⁺	$\frac{TECN}{BABR}$ $\frac{TECN}{BABR}$ $\frac{TECN}{BBS3}$ $\pi^{-}\eta'.$	$\frac{COMMENT}{J/\psi \rightarrow K_{2}}$ $\frac{COMMENT}{J/\psi \rightarrow K^{-1}}$ $\frac{COMMENT}{J/\psi \rightarrow \pi^{+1}}$	$ \frac{\mathbf{F}_{31}^{+} \mathbf{F}_{181}}{\mathbf{F}_{32}^{-} \mathbf{F}_{180}} $ $ \frac{\mathbf{F}_{32}^{-} \mathbf{F}_{180}}{\mathbf{F}_{33}^{-} \mathbf{F}_{33}^{-} \mathbf{F}_{35}^{-} \mathbf{F}_{163}^{-}} $
<u>VALUE (%)</u> 6.3±0.8±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)^0 \pi^0 \rightarrow K')$ <u>VALUE (%)</u> 9.3±2.0±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450) \eta'(958) \rightarrow K')$ <u>VALUE (units 10⁻⁶)</u> 3.28±0.55±0.44 ¹ From a partial wave $\Gamma(\rho(1700)\pi \rightarrow \pi^+\pi)$ <u>VALUE (units 10⁻³)</u>	$\frac{EVTS}{4k}$ analysis in $+ K^{-} \pi^{0}$ $\frac{EVTS}{2k}$ analysis in $\Rightarrow \pi^{+} \pi^{-}$ $\frac{EVTS}{119}$ analysis in $= \frac{EVTS}{119}$ $= \text{ analysis in }$ $= \frac{EVTS}{119}$	$\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{\eta'(958)}{\Gamma_{total}}/\Gamma_{total}$ $\frac{DOCUMENT \ ID}{1 \ ABLIKIM}$ of the decay J/ψ . $\frac{DOCUMENT \ ID}{1 \ ABLIKIM}$) 17c) 17c 17Aκ → π ⁺	$\frac{TECN}{BABR}$ $\frac{TECN}{BABR}$ $\frac{TECN}{BES3}$ $\pi^{-}\eta'.$ $TECN$	$\frac{COMMENT}{J/\psi \rightarrow K_{2}^{COMMENT}}$ $\frac{COMMENT}{J/\psi \rightarrow K^{-1}}$ $\frac{COMMENT}{J/\psi \rightarrow \pi^{+1}}$ $COMMENT$	$ \frac{1}{9} \kappa^{\pm} \pi^{\mp} $ Γ₃₂/Γ₁₈₀ + κ⁻ π⁰ Γ₃₃/Γ - π⁻ η' Γ₃₅/Γ₁₆₃
<u>VALUE (%)</u> 6.3±0.8±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)^0 \pi^0 \rightarrow K)$ <u>VALUE (%)</u> 9.3±2.0±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)\eta'(958) \rightarrow K)$ <u>VALUE (units 10⁻⁶)</u> 3.28±0.55±0.44 ¹ From a partial wave $\Gamma(\rho(1700)\pi \rightarrow \pi^+\pi)$ <u>VALUE (units 10⁻³)</u> 8±2±5	$\frac{EVTS}{4k}$ analysis in $+ K^{-} \pi^{0}$ $\frac{EVTS}{2k}$ analysis in $+ \pi^{-} \pi^{0}$ $\frac{EVTS}{119}$ $= analysis$ $\pi^{-} \pi^{0} / \Gamma$ $\frac{EVTS}{20k}$	$\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{D}{\Gamma} (K^+ K^- \pi^0)$ $\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{\eta'(958)}{\Gamma \ total}$ $\frac{DOCUMENT \ ID}{1 \ ABLIKIM}$ of the decay J/ψ $\frac{DOCUMENT \ ID}{1 \ LEES}$) 17c) 17c 17AK $\rightarrow \pi^+$ 17C	$\frac{TECN}{BABR}$ $\frac{TECN}{BABR}$ $\frac{TECN}{\pi^{-}\eta'}$ $\frac{TECN}{BABR}$	$\frac{COMMENT}{J/\psi \rightarrow K_{2}}$ $\frac{COMMENT}{J/\psi \rightarrow K^{-1}}$ $\frac{COMMENT}{J/\psi \rightarrow \pi^{+1}}$ $\frac{COMMENT}{J/\psi \rightarrow \pi^{+1}}$	Γ 31/ Γ 181 $\frac{1}{2} \kappa^{\pm} \pi^{\mp}$ Γ 32/ Γ 180 Γ 32/ Γ 180 Γ 33/ Γ Γ 35/ Γ 163 Γ π ⁻ π ⁰
<u>VALUE (%)</u> 6.3±0.8±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)^0 \pi^0 \rightarrow K)$ <u>VALUE (%)</u> 9.3±2.0±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450) \eta'(958) \rightarrow K)$ <u>VALUE (units 10⁻⁶)</u> 3.28±0.55±0.44 ¹ From a partial wave $\Gamma(\rho(1700)\pi \rightarrow \pi^+\pi)$ <u>VALUE (units 10⁻³)</u> 8±2±5 ••• We do not use the	$\frac{EVTS}{4k}$ analysis in $+ K - \pi^{0}$ $\frac{EVTS}{2k}$ analysis in $\Rightarrow \pi + \pi -$ $\frac{EVTS}{119}$ analysis in $= \frac{EVTS}{119}$ $= \frac{EVTS}{20k}$ $= \frac{EVTS}{20k}$ analysis in	$\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{\eta'(958)}{\Gamma_{total}}/\Gamma_{total}$ $\frac{DOCUMENT \ ID}{1 \ ABLIKIM}$ The decay J/ψ . $\frac{DOCUMENT \ ID}{1 \ LEES}$ The and the decay are an isobar model.) 17C 17C 17AK $\rightarrow \pi^+$ 17C rs, fits,	$\frac{TECN}{BABR}$ $\frac{TECN}{BABR}$ $\frac{TECN}{\pi^{-} \eta'}$ $\frac{TECN}{BABR}$ $\lim_{limits, e}$	$\frac{COMMENT}{J/\psi \rightarrow K_{S}^{O}}$ $\frac{COMMENT}{J/\psi \rightarrow K^{-1}}$ $\frac{COMMENT}{J/\psi \rightarrow \pi^{+1}}$ $\frac{COMMENT}{J/\psi \rightarrow \pi^{+1}}$ $\frac{COMMENT}{J/\psi \rightarrow \pi^{+1}}$ $\frac{COMMENT}{J/\psi \rightarrow \pi^{+1}}$	
<u>VALUE (%)</u> 6.3±0.8±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)^0 \pi^0 \rightarrow K)$ <u>VALUE (%)</u> 9.3±2.0±0.6 ¹ From a Dalitz plot a $\Gamma(\rho(1450)\eta'(958) \rightarrow K)$ <u>VALUE (units 10⁻⁶)</u> 3.28±0.55±0.44 ¹ From a partial wave $\Gamma(\rho(1700)\pi \rightarrow \pi^+\pi)$ <u>VALUE (units 10⁻³)</u> 8±2±5 ••• We do not use the 22 ± 6	$\frac{EVTS}{4k}$ analysis in $+ K^{-} \pi^{0}$ $\frac{EVTS}{2k}$ analysis in $+ \pi^{-} \pi^{0}$ $\frac{EVTS}{119}$ analysis in $\frac{EVTS}{119}$ $\frac{EVTS}{20k}$ analysis in $\frac{EVTS}{20k}$	$\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{D}{\Gamma} (K^+ K^- \pi^0)$ $\frac{DOCUMENT \ ID}{1 \ LEES}$ The an isobar model. $\frac{\eta'(958)}{\Gamma \ total}$ $\frac{DOCUMENT \ ID}{1 \ ABLIKIM}$ The decay J/ψ $\frac{DOCUMENT \ ID}{1 \ LEES}$ The decay J/ψ $\frac{DOCUMENT \ ID}{1 \ LEES}$ The decay J/ψ) 17C 17C 17AK $\rightarrow \pi^+$ 17C 17C 17AK 17C 17AK 17C	$\frac{TECN}{BABR}$ $\frac{TECN}{BABR}$ $\frac{TECN}{\pi^{-} \eta'}$ $\frac{TECN}{BABR}$ $\lim_{imits, e}{BABR}$	$\frac{COMMENT}{J/\psi \rightarrow K_{2}^{COMMENT}}$ $\frac{COMMENT}{J/\psi \rightarrow K^{-1}}$ $\frac{COMMENT}{J/\psi \rightarrow \pi^{+1}}$ $\frac{COMMENT}{J/\psi \rightarrow \pi^{+1}}$ $\frac{COMMENT}{J/\psi \rightarrow \pi^{+1}}$ $\frac{COMMENT}{J/\psi \rightarrow \pi^{+1}}$	Γ 31/ Γ 181 $\frac{1}{2} \kappa^{\pm} \pi^{\mp}$ Γ 32/ Γ 180 Γ 33/ Γ Γ 33/ Γ Γ 35/ Γ 163 $-\pi^{-} \pi^{0}$ $-\pi^{-} \pi^{0}$

² From a Dalitz plot analysis in a Veneziano model.

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Citation: R.L. Workman et al. (Particle Data Group), Prog. Theor. Exp. Phys. 2022, 083C01 (2022) and 2023 update

$\Gamma(\omega \pi^0 \rightarrow \pi^+ \pi^-)$	$(\pi^0)/\Gamma(\pi^+\pi)$	r ⁻ π ⁰)			Γ ₄₀ /Γ ₁₆₃
VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
8±3±2	20k	¹ LEES	17C	BABR	$J/\psi \rightarrow \pi^+\pi^-\pi^0$

 $^{1}\,\mathrm{From}$ a Dalitz plot analysis in an isobar model and significance 4.9 $\sigma.$

$\Gamma(\omega \pi^+ \pi^-)/\Gamma_{\text{total}}$		Γ ₄₁ /Γ
VALUE (units 10^{-3})	EVTS	DOCUMENT ID TECN COMMENT
8.5±1.0 OUR AVER	AGE Erro	r includes scale factor of 1.3. See the ideogram below.
$10.6\!\pm\!1.2\!\pm\!0.1$	3531	¹ ANASHIN 22 KEDR $J/\psi \rightarrow 2(\pi^+\pi^-)\pi^0$
7.0 ± 1.6	18058	AUGUSTIN 89 DM2 J $/\psi ightarrow$ 2 $(\pi^+\pi^-)\pi^0$
7.8 ± 1.6	215	BURMESTER 77D PLUT e^+e^-
6.8 ± 1.9	348	VANNUCCI 77 MRK1 $e^+e^- \rightarrow 2(\pi^+\pi^-)\pi^0$
¹ ANASHIN 22 repo = (0.946 \pm 0.016 $\pi^{+}\pi^{-}\pi^{0}$) = (89. second error is the	orts $[\Gamma(J/\psi \pm 0.108)$ $2 \pm 0.7) \times$ systematic	$(1S) \rightarrow \omega \pi^+ \pi^-)/\Gamma_{total}$ × [B(ω (782) $\rightarrow \pi^+ \pi^- \pi^0$)] × 10 ⁻² which we divide by our best value B(ω (782) $\rightarrow 10^{-2}$. Our first error is their experiment's error and our error from using our best value.
WEIGHTED 8.5±1.0 (Errc	AVERAGE	1.3)
		Values above of weighted average, error, and scale factor are based upon the data in this ideogram only. They are not neces- sarily the same as our 'best' values, obtained from a least-squares constrained fit utilizing measurements of other (related) quantities as additional information.
		χ^{2} ANASHIN 22 KEDR 2.8 AUGUSTIN 89 DM2 0.9 BURMESTER 77D PLUT 0.2 VANNUCCI 77 MRK1 0.8 4.8 (Confidence Level = 0.187)
0 5	10	15 20 25
$\Gamma(\omega \pi^+ \pi^-$	$)/\Gamma_{total}$ (units 10 ⁻³)
$\Gamma(\omega \pi^0 \pi^0) / \Gamma_{ m total}$		Γ ₄₂ /Γ
VALUE (units 10^{-3})	EVTS	DOCUMENT ID TECN COMMENT
3.4±0.3±0.7	509	AUGUSTIN 89 DM2 $J/\psi \rightarrow \pi^+\pi^- 3\pi^0$

Citation: R.L. Workman et al. (Particle Data Group), Prog. Theor. Exp. Phys. 2022, 083C01 (2022) and 2023 update


$\Gamma(\omega \eta' \pi^+ \pi^-) / \Gamma_{\text{total}}$	əl			Γ ₅₀ /Ι
VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TECN	COMMENT
$1.12 {\pm} 0.02 {\pm} 0.13$	14k	¹ ABLIKIM	19AC BES3	$J/\psi \rightarrow \omega \eta' \pi^+ \pi^-$
1 Using the decays ω	$\gamma \rightarrow \pi^+ \pi$	$^-\pi^0$ and $\eta^\prime ightarrow ~\eta^\prime$	$\pi^+\pi^-$.	

$\Gamma(\omega \eta'(958))/\Gamma_{total}$					Г ₅₁ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.89 ± 0.18 OUR AVERA	GE				
$2.08\!\pm\!0.30\!\pm\!0.14$	137	¹ ABLIKIM	17AK	BES3	$J/\psi \rightarrow \pi^+ \pi^- \eta'$
2.26 ± 0.43	218	² ABLIKIM	06F	BES2	$J/\psi ightarrow \omega \eta'$
$1.8 \begin{array}{c} +1.0 \\ -0.8 \end{array} \pm 0.3$	6	JOUSSET	90	DM2	$J/\psi ightarrow $ hadrons
$1.66\!\pm\!0.17\!\pm\!0.19$		COFFMAN	88	MRK3	$e^+e^- \rightarrow 3\pi \eta'$

¹ From a partial wave analysis of the decay $J/\psi \rightarrow \pi^+ \pi^- \eta'$. ² Using B($\eta' \rightarrow \pi^+ \pi^- \eta$) = (44.3 ± 1.5)%, B($\eta' \rightarrow \pi^+ \pi^- \gamma$) = 29.5 ± 1.0%, B($\eta \rightarrow 2\gamma$) = 39.43 ± 0.26%, and B($\omega \rightarrow \pi^+ \pi^- \pi^0$) = (89.1 ± 0.7)%.

$\Gamma(\omega f_0(980))/\Gamma_{\text{total}}$

VALUE (units 10 ⁻⁴)	DOCUMENT ID		TECN	COMMENT
1.41±0.27±0.47	¹ AUGUSTIN	89	DM2	$J/\psi \rightarrow 2(\pi^+\pi^-)\pi^0$
¹ Assuming B($f_0(980) \rightarrow \pi^+$				

$\Gamma(\omega f_0(1710) \rightarrow \omega K \overline{K}) / \Gamma_{\text{total}}$

VALUE (units 10 ⁻⁴)	DOCUMENT ID		TECN	COMMENT	
4.8±1.1±0.3	^{1,2} FALVARD	88	DM2	$J/\psi ightarrow$ hadrons	
¹ Includes unknown branchin	g fraction $f_0(1710)$	$\rightarrow K$	K.		

²Addition of $f_0(1710) \rightarrow K^+ K^-$ and $f_0(1710) \rightarrow K^0 \overline{K}^0$ branching ratios.

$\Gamma(\omega f_1(1420))/\Gamma_{\text{total}}$

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
$6.8^{+1.9}_{-1.6}{\pm}1.7$	111^{+31}_{-26}	BECKER	87	MRK3	$e^+e^- ightarrow$ hadrons

$\Gamma(\omega f'_2(1525))/\Gamma_{\text{total}}$

DOCUMENT ID TECN COMMENT <u>CL%</u> <2.2 × 10⁻⁴ ¹ VANNUCCI 77 MRK1 $e^+e^- \rightarrow \pi^+\pi^-\pi^0 K^+K^-$ 90 • • • We do not use the following data for averages, fits, limits, etc. • • • $< 2.8 \times 10^{-4}$ 90 ¹ FALVARD 88 DM2 $J/\psi
ightarrow$ hadrons ¹Re-evaluated assuming $B(f'_2(1525) \rightarrow K\overline{K}) = 0.713$.

$\Gamma(\omega X(1835) \rightarrow \omega \rho \overline{\rho}) / \Gamma_{\text{total}}$						
VALUE	CL%	DOCUMENT ID		TECN	COMMENT	
<3.9 × 10 ⁻⁶	95	ABLIKIM	13P	BES3	$J/\psi \rightarrow \gamma \pi^0 \rho \overline{\rho}$	i

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Γ₅₄/Γ

 Γ_{55}/Γ

 Γ_{53}/Γ

 Γ_{52}/Γ

$\Gamma(\omega X(1835), X \rightarrow \eta' \pi^+ \pi^-)$	⁻)/Γ _{total}		Г ₅₇ /Г
VALUE	DOCUMENT ID	TECN	COMMENT
<6.2 × 10 ⁻⁵	¹ ABLIKIM	19AC BES3	$J/\psi \rightarrow \omega \eta' \pi^+ \pi^-$
1 Using the decays $\omega o ~\pi^+\pi$	$-\pi^0$ and $\eta' o \eta_{\pi}$	$\pi^+\pi^-$.	

$\Gamma(\omega K^+ K^-)/\Gamma_{tot}$	al				Г ₅₈ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
$1.52 {\pm} 0.30 {\pm} 0.01$	276	¹ ANASHIN	22	KEDR	$J/\psi \rightarrow K^+ K^- \pi^+ \pi^- \pi^0$
1 ANASHIN 22 rep = (0.136 \pm 0.00 $\pi^{+}\pi^{-}\pi^{0}$) = (8 second error is th	ports [$\Gamma(.$ 8 ± 0.02 9.2 ± 0.2 me system	$J/\psi(1S) \rightarrow \omega K^+ K$ 26) $\times 10^{-2}$ which v 7) $\times 10^{-2}$. Our first natic error from using	r)/ ve di t erro g our	F _{total}] : ivide by or is the best val	× $[B(\omega(782) \rightarrow \pi^+ \pi^- \pi^0)]$ our best value $B(\omega(782) \rightarrow$ ir experiment's error and our lue.

$\Gamma(\omega K^{\pm} K^{0}_{S} \pi^{\mp})/2$	F total			Г ₅₉ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID	TECN	COMMENT
34 ± 5 OUR AVE	RAGE			
$37.7 \pm 0.8 \pm 5.8$	1972 ± 41	ABLIKIM	08E BES2	$e^+e^- ightarrow J/\psi$
$29.5 \!\pm\! 1.4 \!\pm\! 7.0$	879 ± 41	BECKER	87 MRK3	$e^+e^- ightarrow$ hadrons

$\Gamma(\omega K \overline{K}) / \Gamma_{\text{total}}$	I				Г	60/Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT	
19 \pm 4 OUR A	WERAGE					
$19.8 \pm 2.1 \pm 3.9$		¹ FALVARD	88	DM2	$J/\psi ightarrow$ hadrons	
16 ± 10	22	FELDMAN	77	MRK1	e ⁺ e ⁻	
-		0-0				

 $^1 \, {\rm Addition}$ of $\omega \, {\rm K}^+ \, {\rm K}^-$ and $\omega \, {\rm K}^0 \, \overline{\rm K}^0$ branching ratios.

Γ(<i>ωK</i> *(892) Κ -	⊢ c.c.)/Γ _{total}				Г ₆₁ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
61 ± 9 OUR A	VERAGE				
$62.0 \pm 6.8 \pm 10.6$	899 ± 98	ABLIKIM	08E	BES2	$J/\psi \rightarrow \omega K^0_S K^{\pm} \pi^{\mp}$
65.3±10.2±13.5	176 ± 28	ABLIKIM	08E	BES2	$J/\psi \rightarrow \omega \kappa^+ \kappa^- \pi^0$
$53 \pm 14 \pm 14$	530 ± 140	BECKER	87	MRK3	$e^+e^- ightarrow$ hadrons
$\Gamma(\eta' K^{*\pm} K^{\mp})/\Gamma$	total				Г ₆₂ /Г
VALUE (units 10^{-3})		DOCUMENT ID		TECN	COMMENT
1.48±0.13 OUR A	VERAGE				
$1.50\!\pm\!0.02\!\pm\!0.19$		¹ ABLIKIM	18AI	B BES3	$J/\psi \rightarrow \eta' K^* \overline{K}$
$1.47\!\pm\!0.03\!\pm\!0.17$		² ABLIKIM	18A	B BES3	$J/\psi \rightarrow \eta' K^* \overline{K}$
¹ From $\eta' K^+ K^-$ ² From $\eta' K^0_S K^+$	$= \pi^{0}$. $= \pi^{\mp}$.				

$\Gamma(\eta' \kappa^{*0} \overline{\kappa}^0 + \text{c.c.}) / \Gamma_{\text{total}}$			Г ₆₃ /Г
VALUE (units 10 ⁻³)	DOCUMENT ID	TECN	COMMENT
$1.66 {\pm} 0.03 {\pm} 0.21$	¹ ABLIKIM	18AB BES3	$J/\psi ightarrow \ \eta' K^* \overline{K}$

¹ From $\eta' \kappa_S^0 \kappa^{\pm} \pi^{\mp}$.

$I(\eta' n_1(1415) \rightarrow \eta' K^+ K + C.C.)/I_{total}$	Г ₆₄ /Г
VALUE (units 10 ⁻⁴) EVTS DOCUMENT ID TECN COMMENT	
2.16 \pm 0.12 \pm 0.29 1.1k ¹ ABLIKIM 18AB BES3 $J/\psi ightarrow \eta'$	$h_1 ightarrow \eta' K^* \overline{K}$
¹ From $\eta' \kappa_S^0 \kappa^{\pm} \pi^{\mp}$.	
$\Gamma(\eta' h_1(1415) ightarrow \eta' K^{*\pm} K^{\mp}) / \Gamma_{\text{total}}$	Г ₆₅ /Г
VALUE (units 10 ⁻⁴) EVTS DOCUMENT ID TECN COMMENT	
1.51 \pm 0.09 \pm 0.21 1.0k ¹ ABLIKIM 18AB BES3 $J/\psi ightarrow \eta'$	$h_1 ightarrow \eta' K^* \overline{K}$
¹ From $\eta' \kappa^+ \kappa^- \pi^0$.	
$\Gamma(\eta' h_1(1415) ightarrow \gamma \eta' \eta') / \Gamma_{\text{total}}$	Г ₆₆ /Г
VALUE (units 10 ⁻⁷) DOCUMENT ID TECN COMMENT	
4.69±0.80 +0.74 ¹ ABLIKIM 22C BES3 $J/\psi \rightarrow \gamma \eta' \eta' \rightarrow$	$4/5\gamma 2(\pi^+\pi^-)$
1 From a partial wave analysis of the systems (γX) , with $X o \ \eta' \eta'$,	and $(\eta' X)$, with
$X \to \gamma \eta'$ in the decay $J/\psi \to \gamma \eta' \eta'$. The intermediate resonance λ by a constant-width, relativistic Breit-Wigner.	X is parametrized
$\Gamma(h_1(1415)\eta' \to \gamma \eta \eta') / \Gamma_{\text{total}}$	Г ₂₇ /Г
VALUE (units 10^5)DOCUMENT IDTECNCOMMENT	NT
\bullet \bullet \bullet We do not use the following data for averages, fits, limits, etc. \bullet	•
$0.08 \pm 0.01 {+0.01 \atop -0.02}$ ¹ ABLIKIM 22AS BES3 $J/\psi(15)$	$(5) \rightarrow \gamma \eta \eta'$
¹ From a Breit-Wigner fit involving 9 resonances and a resonating exotic P -wave.	$\eta_1(1855) \rightarrow \eta \eta'$
$\Gamma(h_1(1595)\eta' o \gamma \eta \eta') / \Gamma_{\text{total}}$	Г ₂₈ /Г
$\frac{\Gamma(h_1(1595)\eta' \rightarrow \gamma \eta \eta') / \Gamma_{\text{total}}}{VALUE \text{ (units } 10^{-5})} \qquad DOCUMENT \text{ ID} \qquad TECN COMMENT$	Г₂₈/Г
$ \begin{array}{c} \Gamma(h_1(1595)\eta' \to \gamma \eta \eta') / \Gamma_{\text{total}} \\ \hline \underline{VALUE \ (\text{units } 10^{-5})} & \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMENT} \\ \bullet \bullet \bullet \text{ We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \end{array} $	Г₂₈/Г ∙
$\begin{split} & \Gamma(h_1(1595)\eta' \to \gamma \eta \eta') / \Gamma_{\text{total}} \\ & \underbrace{VALUE \text{ (units } 10^{-5})}_{\bullet \bullet \bullet \text{ We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & \stackrel{1}{} \text{ABLIKIM} & 22\text{AS BES3} & J/\psi(150) \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & \stackrel{1}{} \text{ABLIKIM} & 22\text{AS BES3} & J/\psi(150) \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & \stackrel{1}{} \text{ABLIKIM} & 22\text{AS BES3} & J/\psi(150) \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & \stackrel{1}{} \text{ABLIKIM} & 22\text{AS BES3} & J/\psi(150) \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & \stackrel{1}{} \text{ABLIKIM} & 22\text{AS BES3} & J/\psi(150) \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & \stackrel{1}{} \text{ABLIKIM} & 22\text{AS BES3} & J/\psi(150) \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & \stackrel{1}{} \text{ABLIKIM} & 22\text{AS BES3} & J/\psi(150) \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & \stackrel{1}{} \text{ABLIKIM} & 22\text{AS BES3} & J/\psi(150) \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & \stackrel{1}{} \text{ABLIKIM} & 22\text{AS BES3} & J/\psi(150) \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & \stackrel{1}{} \text{ABLIKIM} & 22\text{AS BES3} & J/\psi(150) \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & \stackrel{1}{} \text{ABLIKIM} & 22\text{AS BES3} & J/\psi(150) \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & \stackrel{1}{} \text{ABLIKIM} & 0.02 \substack{+0.03 \\ -0.01} & \stackrel{1}{} ABLI$	Γ_{28}/Γ • 5) $\rightarrow \gamma \eta \eta'$
$\begin{split} & \Gamma(h_1(1595)\eta' \to \gamma \eta \eta') / \Gamma_{\text{total}} \\ & \underbrace{VALUE \text{ (units } 10^{-5})}_{\bullet \bullet \bullet} \text{ We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & 1 \text{ ABLIKIM} & 22\text{AS BES3} & J/\psi(150) \\ & I \text{ From a Breit-Wigner fit involving 9 resonances and a resonating exotic of } P\text{-wave.} \end{split}$	Γ₂₈/Γ • 5) $\rightarrow \gamma \eta \eta'$ $\eta_1(1855) \rightarrow \eta \eta'$
$ \begin{array}{c c} \Gamma(h_1(1595)\eta' \rightarrow \gamma \eta \eta')/\Gamma_{\text{total}} \\ \hline & \underline{VALUE \ (\text{units } 10^{-5})} & \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMEN} \\ \bullet \bullet \bullet \text{ We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \\ 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & 1 \text{ ABLIKIM} & 22\text{AS BES3 } J/\psi(15) \\ 1 \text{ From a Breit-Wigner fit involving 9 resonances and a resonating exotic } \\ \Gamma(\overline{K} K^*(892) + \text{c.c.} \rightarrow K_S^0 K^{\pm} \pi^{\mp})/\Gamma(K_S^0 K^{\pm} \pi^{\mp}) \end{array} $	Γ_{28}/Γ • 5) $\rightarrow \gamma \eta \eta'$ $\eta_1(1855) \rightarrow \eta \eta'$ Γ_{68}/Γ_{181}
$ \begin{split} & \Gamma(h_1(1595)\eta' \to \gamma \eta \eta') / \Gamma_{\text{total}} \\ & \underbrace{VALUE \text{ (units } 10^{-5)}}_{\bullet \bullet \bullet \text{ We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & 1 \text{ ABLIKIM} & 22\text{AS BES3 } J/\psi(15) \\ & 1 \text{ From a Breit-Wigner fit involving 9 resonances and a resonating exotic a } P \text{-wave.} \\ & \Gamma(\overline{K}K^*(892) + \text{c.c.} \to K_S^0 K^{\pm} \pi^{\mp}) / \Gamma(K_S^0 K^{\pm} \pi^{\mp}) \\ & \underbrace{VALUE(\%)}_{\bullet \to 0} & \underbrace{EVTS}_{\bullet \to 0} & \underbrace{DOCUMENT ID}_{\bullet \to 0} & \underbrace{TECN}_{\bullet \to 0} & \underbrace{COMMEN}_{\bullet \to 0} \\ & \underbrace{COMMEN}_{\bullet \to 0} & \underbrace{COMMEN}_{\bullet \to 0} & \underbrace{COMMEN}_{\bullet \to 0} & \underbrace{COMMEN}_{\bullet \to 0} \\ & \underbrace{COMMEN}_{\bullet \to 0} & \underbrace{COMMEN}_{$	$ \Gamma_{28}/\Gamma $ • 5) → γηη' η ₁ (1855) → ηη' $ \Gamma_{68}/\Gamma_{181} $ NT
$ \begin{split} & \Gamma(h_1(1595)\eta' \to \gamma \eta \eta') / \Gamma_{\text{total}} \\ & \underbrace{VALUE \text{ (units } 10^{-5)}}_{\bullet \bullet \bullet \text{ We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \\ & \bullet \bullet \text{ We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & 1 \text{ ABLIKIM} & 22\text{ AS BES3 } J/\psi(15) \\ & 1 \text{ From a Breit-Wigner fit involving 9 resonances and a resonating exotic } \\ & \Gamma(\overline{K}K^*(892) + \text{c.c.} \to K_S^0 K^{\pm} \pi^{\mp}) / \Gamma(K_S^0 K^{\pm} \pi^{\mp}) \\ & \underbrace{VALUE(\%)}_{VALUE(\%)} & \underbrace{EVTS}_{4k} & 1 \underbrace{DOCUMENT ID}_{LEES} & \underline{TECN} & \underbrace{COMMEN}_{J/\psi \to W} \\ & \bullet \bullet & \bullet & \bullet \\ \hline & \bullet \bullet & \bullet & \bullet & \bullet \\ \hline & \bullet \bullet & \bullet & \bullet & \bullet \\ \hline & \bullet \bullet & \bullet & \bullet & \bullet \\ \hline & \bullet \bullet & \bullet & \bullet & \bullet \\ \hline & \bullet & \bullet & \bullet & \bullet \\ \hline & \bullet & \bullet & \bullet & \bullet \\ \hline & \bullet & \bullet & \bullet & \bullet \\ \hline & \bullet & \bullet & \bullet & \bullet \\ \hline & \bullet & \bullet & \bullet & \bullet \\ \hline & \bullet & \bullet & \bullet & \bullet \\ \hline & \bullet & \bullet & \bullet & \bullet \\ \hline & \bullet $	Γ_{28}/Γ • 5) → γηη' η ₁ (1855) → ηη' Γ_{68}/Γ_{181} <u>NT</u> • $\kappa_S^0 \kappa^{\pm} \pi^{\mp}$
$ \begin{split} & \Gamma(h_1(1595)\eta' \to \gamma \eta \eta') / \Gamma_{\text{total}} \\ & \underbrace{VALUE \text{ (units } 10^{-5})}_{\bullet \bullet \bullet} & \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMEN} \\ & \bullet \bullet \text{ We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & 1 \text{ ABLIKIM} & 22\text{ AS BES3 } J/\psi(15) \\ & 1 \text{ From a Breit-Wigner fit involving 9 resonances and a resonating exotic } \\ & \Gamma(\overline{K}K^*(892) + \text{c.c.} \to K_S^0 K^{\pm} \pi^{\mp}) / \Gamma(K_S^0 K^{\pm} \pi^{\mp}) \\ & \underline{VALUE}(\%) & \underline{EVTS} & \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMEN} \\ & 90.5 \pm 0.9 \pm 3.8 & 4k & 1 & \underline{LEES} & 17C & BABR & J/\psi \to 1 \\ & \text{ From a Dalitz plot analysis in an isobar model.} \end{split} $	$ \Gamma_{28}/\Gamma $ • 5) → γηη' η ₁ (1855) → ηη' $ \Gamma_{68}/\Gamma_{181} $ NT • $ \kappa_{S}^{0} \kappa^{\pm} \pi^{\mp} $
$ \begin{split} & \Gamma(h_1(1595)\eta' \to \gamma \eta \eta') / \Gamma_{\text{total}} \\ & \underbrace{VALUE \text{ (units } 10^{-5)}}_{\bullet \bullet \bullet} & \underbrace{DOCUMENT \text{ ID}}_{\bullet \bullet \bullet} & \underbrace{TECN}_{\bullet} & \underbrace{COMMEN}_{\bullet} \\ & \bullet \bullet \text{ We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & 1 \text{ ABLIKIM} & 22\text{ AS BES3 } J/\psi(15) \\ & 1 \text{ From a Breit-Wigner fit involving 9 resonances and a resonating exotic } \\ & P_{\bullet}\text{wave.} \\ \hline \Gamma(\overline{K} K^*(892) + \text{c.c.} \to K_S^0 K^{\pm} \pi^{\mp}) / \Gamma(K_S^0 K^{\pm} \pi^{\mp}) \\ & \underbrace{VALUE (\%)}_{P_{\bullet} \text{ wave.}} & \underbrace{EVTS}_{Ak} & 1 \\ & 1 \\ \text{LEES} & 17c \\ \hline BABR & J/\psi \to \\ & 1 \\ \hline \text{From a Dalitz plot analysis in an isobar model.} \\ \hline \Gamma(K^+ K^*(892)^- + \text{c.c.}) / \Gamma_{\text{total}} \end{split} $	$ \Gamma_{28}/\Gamma $ • 5) → γηη' η ₁ (1855) → ηη' $ \Gamma_{68}/\Gamma_{181} $ <u>NT</u> $ K_{S}^{0} \kappa^{\pm} \pi^{\mp} $ $ \Gamma_{69}/\Gamma $
$ \begin{split} & \Gamma(h_1(1595)\eta' \to \gamma \eta \eta') / \Gamma_{\text{total}} \\ & \underbrace{VALUE \text{ (units } 10^{-5)}}_{\bullet \bullet \bullet} & \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMEN} \\ \bullet \bullet \text{ We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & 1 \text{ ABLIKIM} & 22\text{ AS BES3 } J/\psi(15) \\ & 1 \text{ From a Breit-Wigner fit involving 9 resonances and a resonating exotic } \\ & P_{\text{wave.}} \\ \hline \Gamma(\overline{K} K^*(892) + \text{c.c.} \to K_S^0 K^{\pm} \pi^{\mp}) / \Gamma(K_S^0 K^{\pm} \pi^{\mp}) \\ & \underbrace{VALUE (\%)}_{P \text{wave.}} & \underbrace{EVTS}_{4k} & 1 \\ & \underline{DOCUMENT \ ID}_{LEES} & 17C & \underline{BABR} & J/\psi \rightarrow \\ & 1 \text{ From a Dalitz plot analysis in an isobar model.} \\ \hline \Gamma(K^+ K^*(892)^- + \text{c.c.}) / \Gamma_{\text{total}} \\ \hline VALUE (\text{units } 10^{-3}) & \underline{EVTS}_{DOCUMENT \ ID} & \underline{TECN}_{COMMENT} \\ \hline \end{array} $	$ \Gamma_{28}/\Gamma $ • 5) → γηη' η ₁ (1855) → ηη' $ \Gamma_{68}/\Gamma_{181} $ $ \frac{NT}{K_{S}^{0} K^{\pm} \pi^{\mp}} $ $ \Gamma_{69}/\Gamma $ NT
$ \begin{split} & \Gamma(h_1(1595)\eta' \to \gamma \eta \eta')/\Gamma_{\text{total}} \\ & \stackrel{VALUE (units 10^{-5})}{\longrightarrow} & DOCUMENT ID & TECN & COMMENT} \\ & \bullet \bullet \text{ We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & ^1 \text{ ABLIKIM} & 22\text{ AS BES3 } J/\psi(15) \\ & ^1 \text{ From a Breit-Wigner fit involving 9 resonances and a resonating exotic as } \\ & P_{\text{-wave.}} \\ \hline \Gamma(\overline{K}K^*(892) + \text{c.c.} \to K_S^0 K^{\pm} \pi^{\mp})/\Gamma(K_S^0 K^{\pm} \pi^{\mp}) \\ & \frac{VALUE(\%)}{90.5 \pm 0.9 \pm 3.8} & 4\text{k} & ^1 \text{ LEES} & 17\text{c} & \text{BABR} & J/\psi \to \\ & ^1 \text{ From a Dalitz plot analysis in an isobar model.} \\ \hline \Gamma(K^+ K^*(892)^- + \text{c.c.})/\Gamma_{\text{total}} \\ & \frac{VALUE(\text{units } 10^{-3})}{-1.0} & \underline{EVTS} & DOCUMENT ID & TECN & COMMENT \\ \hline 6.0 & \stackrel{+0.8}{-1.0} \text{ OUR AVERAGE} & Error includes scale factor of 2.9. See the identical scale scale factor of 2.9. See the identical scale scale factor of 2.9. See the identical scale sc$	$ \Gamma_{28}/\Gamma $ • 5) $\rightarrow \gamma \eta \eta'$ $\eta_1(1855) \rightarrow \eta \eta'$ Γ_{68}/Γ_{181} $\frac{NT}{K_S^0 \kappa^{\pm} \pi^{\mp}}$ Γ_{69}/Γ NT Heogram below.
$ \begin{split} & \Gamma(h_1(1595)\eta' \rightarrow \gamma \eta \eta')/\Gamma_{\text{total}} \\ & \underbrace{VALUE (\text{units } 10^{-5})}_{\bullet \bullet \bullet} & \text{We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \\ & \bullet \bullet \text{We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \\ & 0.16 \pm 0.02 \stackrel{+0.03}{-0.01} & ^{1} \text{ABLIKIM} & 22\text{AS BES3} & J/\psi(15) \\ & ^{1} \text{From a Breit-Wigner fit involving 9 resonances and a resonating exotic } \\ & P\text{-wave.} \\ \hline \Gamma(\overline{K} K^*(892) + \text{c.c.} \rightarrow K_S^0 K^\pm \pi^\mp)/\Gamma(K_S^0 K^\pm \pi^\mp) \\ & \underbrace{VALUE (\%)}_{P\text{-wave.}} & \underbrace{EVTS}_{4k} & \frac{DOCUMENT ID}{1 \text{ LEES}} & \frac{TECN}{17C} & \underbrace{COMMEN}_{J/\psi \rightarrow 1} \\ & ^{1} \text{From a Dalitz plot analysis in an isobar model.} \\ \hline \Gamma(K^+ K^*(892)^- + \text{c.c.})/\Gamma_{\text{total}} \\ & \underbrace{VALUE (\text{units } 10^{-3})}_{-1.0} & \underbrace{EVTS}_{DOCUMENT ID} & \underbrace{TECN}_{COMMEN} \\ & \text{G.0 } \stackrel{+0.8}{-1.0} & \text{OUR AVERAGE}_{COMENT ID} & \underbrace{TECN}_{2.9.} \text{ See the id} \\ & 8.07 \pm 0.04 \stackrel{+0.38}{-0.61} & 183\text{k} & \text{ABLIKIM} & 19\text{AQ BES}_{J/\psi} \rightarrow \end{aligned}$	$ \Gamma_{28}/\Gamma $ • 5) $\rightarrow \gamma \eta \eta'$ $\eta_1(1855) \rightarrow \eta \eta'$ $ \Gamma_{68}/\Gamma_{181} $ NT $ K_S^0 \kappa^{\pm} \pi^{\mp} $ $ \Gamma_{69}/\Gamma $ NT leogram below. $ \kappa + \kappa - \pi^0 $
$ \begin{split} & \Gamma(h_1(1595)\eta' \rightarrow \gamma \eta \eta')/\Gamma_{\text{total}} \\ & \underbrace{VALUE(\text{units } 10^{-5})}{\text{ bocument } 1D} & \underline{TECN} & \underline{COMMENT} \\ \hline \bullet \bullet \text{ We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \\ & 0.16 \pm 0.02 \substack{+0.03 \\ -0.01} & 1 \text{ ABLIKIM} & 22\text{ AS BES3 } J/\psi(15) \\ & 1 \text{ From a Breit-Wigner fit involving 9 resonances and a resonating exotic at P-wave.} \\ & \Gamma(\overline{K} K^*(892) + \text{c.c.} \rightarrow K_S^0 K^{\pm} \pi^{\mp})/\Gamma(K_S^0 K^{\pm} \pi^{\mp}) \\ & \underline{VALUE(\%)} & \underline{EVTS} & \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMEN} \\ & 90.5 \pm 0.9 \pm 3.8 & 4k & 1 \text{ LEES} & 17c & \text{BABR} & J/\psi \rightarrow \\ & 1 \text{ From a Dalitz plot analysis in an isobar model.} \\ & \Gamma(K^+ K^*(892)^- + \text{c.c.})/\Gamma_{\text{total}} \\ & \underline{VALUE(\text{units } 10^{-3})} & \underline{EVTS} & \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMEN} \\ & 6.0 \ \ -1.0 & \text{OUR AVERAGE} & \text{Error includes scale factor of 2.9. See the id} \\ & 8.07 \pm 0.04 \substack{+0.38 \\ -0.61} & 183k & \text{ABLIKIM} & 19\text{AQ BES} & J/\psi \rightarrow \\ & 4.57 \pm 0.17 \pm 0.70 & 2285 & \text{JOUSSET} & 90 & \text{DM2} & J/\psi \rightarrow \\ \end{array} $	$ \Gamma_{28}/\Gamma $ • • • • • • • • • • • • • • • • • •
$ \begin{split} & \Gamma(h_1(1595) \eta' \rightarrow \gamma \eta \eta') / \Gamma_{\text{total}} \\ & \underbrace{VALUE \text{ (units } 10^{-5)}}_{\bullet \bullet \bullet \text{ We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \\ & \bullet \bullet \text{ We do not use the following data for averages, fits, limits, etc. } \bullet \bullet \\ & 0.16 \pm 0.02 \stackrel{+0.03}{_{-0.01}} & ^{1} \text{ ABLIKIM} & 22\text{ AS BES3 } J/\psi(15) \\ & ^{1} \text{ From a Breit-Wigner fit involving 9 resonances and a resonating exotic for } P-\text{wave.} \\ & \Gamma(\overline{K} K^*(892) + \text{c.c.} \rightarrow K_{S}^{0} K^{\pm} \pi^{\mp}) / \Gamma(K_{S}^{0} K^{\pm} \pi^{\mp}) \\ & \underbrace{VALUE (\%)}_{90.5 \pm 0.9 \pm 3.8} & 4^{1} \text{ LEES} & 17\text{c} \text{ BABR } J/\psi \rightarrow \\ & ^{1} \text{ From a Dalitz plot analysis in an isobar model.} \\ & \Gamma(K^+ K^*(892)^- + \text{c.c.}) / \Gamma_{\text{total}} \\ & \underbrace{VALUE (\text{units } 10^{-3})}_{-1.0} & \underline{EVTS} & \underline{DOCUMENT ID} & \underline{TECN} & \underline{COMMEN} \\ & 6.0 \stackrel{+0.8}{-1.0} \text{ OUR AVERAGE} & \text{Error includes scale factor of } 2.9. \text{ See the id} \\ & 8.07 \pm 0.04 \stackrel{+0.38}{-0.61} & 183\text{ ABLIKIM} & 19\text{AQ BES} & J/\psi \rightarrow \\ & 4.57 \pm 0.17 \pm 0.70 & 2285 & JOUSSET & 90 & DM2 & J/\psi \rightarrow \\ & 5.26 \pm 0.13 \pm 0.53 & \text{COFFMAN} & 88 & \text{MRK3} & J/\psi \rightarrow \\ & K^+ \\ \end{array}$	$ \Gamma_{28}/\Gamma $ • 5) $\rightarrow \gamma \eta \eta'$ $\eta_1(1855) \rightarrow \eta \eta'$ $ \Gamma_{68}/\Gamma_{181} $ NT $K_S^0 K^{\pm} \pi^{\mp}$ $ \Gamma_{69}/\Gamma $ NT leogram below. $K^+ K^- \pi^0$ • hadrons $K^{\pm} K_S^0 \pi^{\mp},$ $K^- \pi^0$

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• • • We do not use the following data for averages, fits, limits, etc. • • •

$2.6 \hspace{0.1in} \pm 0.6$	24	FRANKLIN	83	MRK2	$J/\psi \rightarrow$	$K^+ K^- \pi^0$
3.2 ± 0.6	48	VANNUCCI	77	MRK1	$J/\psi ightarrow$	$K^{\pm}K^{0}_{S}\pi^{\mp}$
4.1 ± 1.2	39	BRAUNSCH	76	DASP	$J/\psi \rightarrow$	κ±x



VAL	<i>UE</i> (units 10 ⁻³)	EVTS	DOCUMENT ID		TECN	COMMENT
4.2	±0.4 OUR AVERA	GE				
3.96	$6\!\pm\!0.15\!\pm\!0.60$	1192	JOUSSET	90	DM2	$J/\psi ightarrow $ hadrons
4.33	$3{\pm}0.12{\pm}0.45$		COFFMAN	88	MRK3	$J/\psi \rightarrow K^{\pm}K^{0}_{S}\pi^{\mp}$
• •	• We do not use the	e following d	ata for averages	, fits,	limits, e	tc. • • •
2.7	± 0.6	45	VANNUCCI	77	MRK1	$J/\psi \rightarrow K^{\pm}K^{0}_{S}\pi^{\mp}$

Γ(K *(892) ⁰ K ⁺ π	+c.c.)/l	total			Г ₇₄ /Г
VALUE (units 10^{-3})		DOCUMENT ID	TECN	COMMENT	
5.73±0.14±0.82		¹ ANASHIN	22 KEDF	$R J/\psi \rightarrow K^+$	$K^{-}\pi^{+}\pi^{-}$
• • • We do not use	e the followin	g data for average	s, fits, limi	ts, etc. • • •	
seen		² ABLIKIM	06c BES2	$J/\psi \rightarrow \overline{K}^*$	$(892)^0 K^+ \pi^-$
¹ Obtained from J 2/3 for the proba ² A $K_0^*(700)$ is o $\overline{K}^*(892)^0 K^+ \pi^-$ of the $J/\psi(1S)$ i	$\psi/\psi ightarrow K^*(z)$ ability of the observed by final state s not present	$\begin{array}{rcl} & 392 \end{pmatrix} \mathcal{K}^{-} \pi^{+} + \mathrm{c.} \\ & \mathcal{K}^{*} (892)^{0} \rightarrow \mathcal{K}^{+} \\ & \mathrm{ABLIKIM} & 06\mathrm{c} & \mathrm{ir} \\ & \mathrm{against} & \mathrm{the} & \overline{\mathcal{K}}^{*} (89) \\ & \mathrm{ed.} \end{array}$	c. $\rightarrow K^+$ π^- decay π^- the K^+ 02). A corr	$K^{-}\pi^{+}\pi^{-}$ ta π^{-} mass spe- responding bran	aking the value ectrum of the nching fraction
Γ(<i>K</i> *(892) ⁰ <i>K</i> ⁻ π	⁺ +c.c.→	$K^{+}K^{-}\pi^{+}\pi^{-}$)/Γ _{total}		Г ₇₈ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TEC	V COMMENT	
3.81±0.10±0.54	1559	ANASHIN	22 KE	$\overline{DR} \ \overline{J/\psi} \to K$	$K^{+}K^{-}\pi^{+}\pi^{-}$
$\Gamma(K^*(892)^0 K_2^0 -$	$\rightarrow \gamma K_{c}^{0} K_{c}^{0}$)/[, .	Γ 7 0/Γ
VALUE (units 10^{-6})	, ,	DOCUMENT ID	TFO	N COMMENT	· / 9/ ·
$6.28 \substack{+0.16 + 0.59 \\ -0.17 - 0.52}$		ABLIKIM	18AA BE	S3 $J/\psi \rightarrow \gamma$	$\gamma K_S^0 K_S^0$
Γ(<i>K</i> *(892) [±] <i>K</i> *(7	700) [∓])/Γ _{tα}	tal			с Г ₈₁ /Г
VALUE (units 10^{-3})	<u>EVTS</u>	DOCUMENT ID	TEC	CN COMMENT	
$1.09 {\pm} 0.18 {+} 0.94 {-} 0.54$	655	ABLIKIM	10E BE	S2 $J/\psi \rightarrow I$	$\kappa^{\pm}\kappa^{0}_{S}\pi^{\mp}\pi^{0}$
Г(<i>K</i> *(892) ⁰ <i>K</i> *(8	92) ⁰)/Γ _{tot} ;	al			Г ₈₂ /Г
VALUE (units 10^{-4})	CL%	DOCUMENT ID	TECN	COMMENT	
• • • We do not use	the followin	g data for average	s, fits, limi	ts, etc. • • •	
<5	90	VANNUCCI 7	7 MRK1	$e^+e^- \rightarrow \pi$	$+\pi^- K^+ K^-$
Г(<i>K</i> *(892) [±] <i>K</i> *(8	892) [∓])/Γ _{to}	tal			Г ₈₃ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TEC	COMMENT	-
$1.00 {\pm} 0.19 {+} 0.11 {-} 0.32$	323	ABLIKIM	10e BE	S2 $J/\psi \rightarrow I$	$\kappa^{\pm}\kappa^{0}_{S}\pi^{\mp}\pi^{0}$
$\Gamma(K_1(1400)^{\pm}K^{\mp})$)/Γ _{total}				Г ₈₄ /Г
VALUE (units 10^{-3})		DOCUMENT ID	TEC	COMMENT	-
3.8±0.8±1.2		¹ BAI	99C BE	S e ⁺ e ⁻	
1 Assuming B(K_1 (1400) $\rightarrow K$	$(\pi^*\pi)=0.94\pm 0.06$			
Г(<i>K</i> *(1410) К +с	$\mathbf{c} \to \mathbf{K}^{\pm}\mathbf{K}$	^{τ∓} π ⁰)/Γ(K ⁺ K	⁻ π ⁰)		Г ₈₆ /Г ₁₈₀
VALUE (%)	EVTS	DOCUMENT ID	TEC	CN COMMENT	
$2.3 \pm 1.1 \pm 0.7$	2k	¹ LEES	17c BA	BR $J/\psi \rightarrow I$	$K^+ K^- \pi^0$
¹ From a Dalitz pl	ot analysis in	an isobar model.			

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$\Gamma(K^*(1410)\overline{K}+c.$	c. $\rightarrow K_S^0$	К [±] π [∓])/Г(К ⁰ _S К	$(\pm \pi^{\mp})$)		Г ₈₇ /Г ₁₈₁
VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT	
$1.5 \pm 0.5 \pm 0.9$	4k	¹ LEES	17C	BABR	$J/\psi \rightarrow K_{2}^{0}$	$5 K^{\pm} \pi^{\mp}$
¹ From a Dalitz plo	t analysis ir	n an isobar model.				
$\Gamma(K_2^*(1430)\overline{K}+c.c)$	$c. o K^{\pm}$	$K^{\mp}\pi^{0})/\Gamma(K^{+}K)$	⁻ π ⁰)			Γ ₈₉ /Γ ₁₈₀
VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT	
$3.5 \pm 1.3 \pm 0.9$	2k	¹ LEES	17C	BABR	$J/\psi \rightarrow K^{-1}$	$+ \kappa^{-} \pi^{0}$
¹ From a Dalitz plo	t analysis ir	n an isobar model.				
$\Gamma(K_2^*(1430)\overline{K}+c.)$	$\mathbf{c} \to K_S^0$	$(K^{\pm}\pi^{\mp})/\Gamma(K^0_S K)$	$(\pm \pi^{\mp})$)		Γ ₉₀ /Γ ₁₈₁
VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT	
$7.1 \pm 1.3 \pm 1.2$	4k	¹ LEES	17C	BABR	$J/\psi \rightarrow K_{g}^{0}$	$SK^{\pm}\pi^{\mp}$
¹ From a Dalitz plo	t analysis ir	n an isobar model.				
$\Gamma(\overline{K}_2^*(1430)K + c.$.c.)/Г _{total}					Г ₉₁ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT	
<40 × 10 ⁻⁴	90	VANNUCCI	77	MRK1	$e^+ e^- ightarrow$	$\kappa^0 \overline{\kappa}_2^{*0}$
\bullet \bullet \bullet We do not use	the followir	ng data for averages	s, fits,	limits, e	etc. • • •	
$< 66 \times 10^{-4}$	90	BRAUNSCH	76	DASP	$e^+e^- ightarrow$	$\kappa^{\pm}\overline{\kappa}_{2}^{*\mp}$
$\Gamma(K_2^*(1430)^+K^-)$	$+$ c.c. \rightarrow	$K^+ K^- \pi^0)/\Gamma_{\rm tota}$	al			Г ₉₂ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT	
$2.69 {\pm} 0.04 {+} 0.25 {-} 0.19$	183k	ABLIKIM	19AQ	BES	$J/\psi \rightarrow K^{-1}$	$+ \kappa - \pi^0$
Γ(<u>K</u> *(1430) ⁰ K*(8	892) ⁰ + c.o	c.)/Γ _{total}				Г ₉₅ /Г
VALUE (units 10^{-3})	E VTS	DOCUMENT ID	TECN	СОМ	MENT	
• • • We do not use	the followir	ng data for averages	s. fits.	limits. e	etc. ● ● ●	
6.7±2.6	40	VANNUCCI 77	MRK	$1 e^+ \epsilon$	$e^- \rightarrow \pi^+ \pi^-$	- K ⁺ K ⁻
$\Gamma(K_{2}^{*}(1430)^{0}\overline{K}_{2}^{*}(1430))$.430) ⁰)/Г	total				Г ₉₈ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	<u>COMMENT</u>	
<29 × 10 ⁻⁴	90	VANNUCCI	77	MRK1	$e^+e^- \rightarrow \pi^+\pi^- P$	<i>к</i> + <i>к</i> −
Γ(K [*] ₂ (1980) ⁺ K ⁻	+ c.c. →	$K^+ K^- \pi^0) / \Gamma_{ m tota}$	al			Г ₁₀₀ /Г
VALUE (units 10 ⁻⁵)	EVTS	DOCUMENT ID		TECN	COMMENT	
$1.1 \pm 0.1 \substack{+0.6 \\ -0.1}$	183k	ABLIKIM	19aq	BES	$J/\psi \rightarrow K^{-1}$	$+ \kappa - \pi^0$
Γ(<i>K</i> [*] ₄ (2045) ⁺ <i>K</i> ⁻ ·	+ c.c. → /	$K^+ K^- \pi^0) / \Gamma_{total}$.			Г101 /Г
VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT	
$6.2\pm0.7^{+2.8}_{-1.4}$	183k	ABLIKIM	19AQ	BES	$J/\psi \rightarrow K^{-1}$	$+\kappa^{-\pi^{0}}$
≜ 1-T						

$\Gamma(K_1(1270)^{\pm}K^{\mp})/\Gamma$	total					Γ ₁₀₂ /Γ
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT	
$< 3.0 \times 10^{-3}$	90 1	BAI	99 C	BES	e^+e^-	
¹ Assuming B($K_1(127)$	$(0) \rightarrow K \rho) =$	=0.42 ± 0.06				
$\Gamma(K_1(1270)K_S^0 \rightarrow \gamma)$	$K^0_S K^0_S)/\Gamma$	total				Г ₁₀₃ /Г
VALUE (units 10^{-7})		DOCUMENT ID		TECN	COMMENT	
$8.54^{+1.07+2.35}_{-1.20-2.13}$		ABLIKIM	18AA	BES3	$J/\psi \rightarrow \gamma K_S^0$	к ⁰ 5
$\Gamma(a_2(1320)^{\pm}\pi^{\mp})/\Gamma_1$	total					Г ₁₀₄ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT	
<43 × 10 ⁻⁴	90	BRAUNSCH	76	DASP	e ⁺ e ⁻	
$\Gamma(\phi \pi^0) / \Gamma_{\text{total}}$ The two different cance of 6.4 σ and	fit values of d cannot be	ABLIKIM 15K distinguished at	below this n	have th noment.	ne same statistic	F₁₀₅/F cal signifi-
VALUE (units 10^{-6})	CL% EVTS		T ID	TEC	COMMENT	
$2.94\ \pm 0.16\ \pm 0.16$	0.8k	¹ ABLIKIM	1	5K BE	$53 e^+e^- \rightarrow$	$J/\psi ightarrow$
$0.124 \pm 0.033 \pm 0.030$	35 ± 9	² ABLIKIM	1	5K BES	$ \begin{array}{ccc} K^+ K^- \\ 53 & e^+ e^- \rightarrow \\ K^+ K^- \end{array} $	$egin{array}{l} \gamma \ J/\psi ightarrow \gamma \ \gamma \gamma \end{array}$
• • • We do not use th	e following d	ata for averages	, fits,	limits, e	etc. • • •	

<6.4	90	³ ABLIKIM	05 B	BES2	$e^+e^- \rightarrow J/\psi \rightarrow$
<6.8	90	COFFMAN	88	MRK3	$e^{+} e^{-} \xrightarrow{K^{+}} K^{-} \pi^{0}$

¹ Corresponding to one of the two fit solutions with $\delta = (-95.9 \pm 1.5)^{\circ}$ for the phase angle between the resonant $J/\psi \rightarrow \phi \pi^0$ and non-phi $J/\psi \rightarrow K^+ K^- \pi^0$ contributions. ² Corresponding to one of the two fit solutions with $\delta = (-152.1 \pm 7.7)^{\circ}$ for the phase angle between the resonant $J/\psi \rightarrow \phi \pi^0$ and non-phi $J/\psi \rightarrow K^+ K^- \pi^0$ contributions. ³ Superseded by ABLIKIM 15K.

$\Gamma(\phi \pi^+ \pi^-) / \Gamma_{total}$						Г ₁₀₆ /Г
VALUE (units 10^{-3}) EVTS	DOCUMENT ID)	TECN	COMMEN	IT	
0.94±0.15 OUR AVERA	GE Error includ	des sca	ale factor	of 1.7.		
$1.09\!\pm\!0.02\!\pm\!0.13$	ABLIKIM	05	BES2	$J/\psi ightarrow$	$\phi \pi^+ \pi^-$	
$0.78\!\pm\!0.03\!\pm\!0.12$	FALVARD	88	DM2	$J/\psi ightarrow$	hadrons	
2.1 ±0.9 23	FELDMAN	77	MRK1	e^+e^-		
$\Gamma(\phi_2(\pi^+\pi^-))/\Gamma_{total}$						Г ₁₀₈ /Г
VALUE (units 10 ⁻⁴)	DOC	UMEN	T ID	TECN	COMMENT	

	DOCOMENTID	1 L CIV	COMMENT
16.0±1.0±3.0	FALVARD	88 DM2	$J/\psi ightarrow$ hadrons



$\Gamma(\phi\eta\eta')/\Gamma_{ ext{total}}$						Г ₁₁₁ /Г
VALUE (units 10^{-4})	EVTS I	DOCUMENT ID	TECI	<u>N</u> <u>CO</u>	MMENT	
$2.32 {\pm} 0.06 {\pm} 0.16$	2.2k ¹ /	ABLIKIM	19AN BES	53 e ⁺	$e^- ightarrow J/\psi$	$^{,} ightarrow$ hadrons
1 Including contribonance at M $pprox$ 1^- , and B(J/ψ	putions from i 2 GeV and I $\rightarrow \eta X) \times E$	ntermediate res $\Gamma pprox 150{ m MeV}$ ${ m S}(X o \phi\eta') pprox$	onances. decaying 10 ^{—4} .	Evidend to $\phi \eta'$	the for an interval $J^P =$	ermediate res 1^+ or $J^P=$
$\Gamma(\phi f_0(980)) / \Gamma_{tot}$	tal					Г ₁₁₂ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID) <u> </u>	ECN	COMMENT	
3.2 ± 0.9 OUR AVER	RAGE Error	includes scale f	actor of 1	.9.		
$4.6 \pm 0.4 \pm 0.8$	FO		88 D	M2 Adko	$J/\psi \rightarrow$ had	rons $\kappa = \kappa + \kappa =$
2.0 ± 0.0	00	GIDAL	01 10	IRN2	$J/\psi \rightarrow \kappa$	
Assuming $B(t_0)$	$(980) \rightarrow \pi\pi)$	= 0.78.				
$\Gamma(\phi \pi^0 f_0(980) \rightarrow$	$\phi \pi^0 \pi^+ \pi^-$	⁻)/Γ _{total}				Г ₁₁₅ /Г
VALUE (units 10^{-6})	EVTS	DOCUMENT	ID	TECN	COMMENT	
4.50±0.80±0.61	355	ABLIKIM	15P	BES3	$J/\psi ightarrow K$	$^{+}K^{-}3\pi$
$\Gamma(\phi \pi^0 f_0(980) \rightarrow$	$\phi \pi^0 \rho^0 \pi^0$	/Γ _{total}				Г ₁₁₆ /Г
<i>VALUE</i> (units 10 ⁻⁶)	EVTS	DOCUMENT	ID	TECN	COMMENT	
1.67±0.50±0.24	70	ABLIKIM	15 P	BES3	$J/\psi ightarrow K$	$^{+}K^{-}3\pi$
$\Gamma(\phi f_0(980)\eta \to \eta$	$\eta \phi \pi^+ \pi^-)/$	Γ _{total}				Г ₁₁₇ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT	ID	TECN	COMMENT	
3.23±0.75±0.73	52	ABLIKIM	08F	BES	$J/\psi ightarrow \eta$	φf ₀ (980)
$\Gamma(\phi a_0(980)^0 \rightarrow \phi)$	$\phi\eta\pi^0)/\Gamma_{ m tot}$	al				Г ₁₁₈ /Г
VALUE (units 10^{-6})	*	DOCUMENT	ID	TECN	COMMENT	
4.37±1.35		¹ ABLIKIM	18D	BES3	$J/\psi \rightarrow \phi$	$\eta \pi^0$
• • • We do not us	e the followin	g data for avera	ages, fits,	limits,	etc. • • •	
$5.0\ \pm 2.7\ \pm 2.5$		² ABLIKIM	11 D	BES3	$J/\psi \rightarrow \phi$	$\eta \pi^0$
¹ Assuming constr netic decay. De branching fractic ² Assuming a ₀ (98)	ructive interfe estructive inte on. 0) — f ₀ (980)	rence between a erference gives a mixing and isos	∍ ₀ (980) – a value o pin breaki	- <i>f</i> ₀ (980 f (4.93 ing via)) mixing and \pm 1.77) $ imes$ 1.77) $ imes$ 1	d electromag- 10 ^{—6} for this < loops.
Г(фђ(1270))/Г.	otal	-		-		Γ110/Γ
$VAI IIF (units 10^{-3})$		DOCUMENT ID	TF	CN C	OMMENT	1131 -
• • • W/a da nat us	<u> </u>	g data for aver	<u> </u>	limite		

	se the fond	owing data for avera	ages,	nus, inniu	S, elc. ● ● ●
< 0.45	90	FALVARD	88	DM2	$J/\psi ightarrow$ hadrons
< 0.37	90	VANNUCCI	77	MRK1	$e^+e^- \rightarrow \pi^+\pi^-K^+K^-$

$\Gamma(\phi f_1(1285))/1$	「 _{total}				Γ ₁₂₀ /	/Γ
VALUE (units 10^{-4})	EVTS	DOCUMENT ID	TECN	СОМ	MENT	
2.6 ± 0.5 OUR AV	ERAGE					
$3.4\!\pm\!1.8\!\pm\!1.5$	1.1k ¹	ABLIKIM	15H BES3	e ⁺ e	$e^- \rightarrow J/\psi \rightarrow \phi \eta \pi^+ \pi^-$	_
$3.2\!\pm\!0.6\!\pm\!0.4$	0	JOUSSET	90 DM2	J/ψ	$\rightarrow \phi 2(\pi^+\pi^-)$	
$2.1\!\pm\!0.5\!\pm\!0.4$	25 2	JOUSSET	90 DM2	J/ψ	$\rightarrow \phi \eta \pi^+ \pi^-$	
• • • We do not	use the follow	wing data for av	erages, fits,	limits,	etc. • • •	
$0.6\!\pm\!0.2\!\pm\!0.1$	16	BECKER	87 MRK3	3 J/ ψ	$\rightarrow \phi K \overline{K} \pi$	
¹ ABLIKIM 15H = (1.20 ± 0.6) = (35 ± 15) the systematic ² We attribute bution at 129	reports $[\Gamma(J \pm 0.14) \times 10^{-1} \times 10^{-2}]$. Out $\times 10^{-2}$. Out $\approx error from to to the f_1(128)7 MeV.$	$/\psi(1S) \rightarrow \phi f_1$ ⁻⁴ which we divi r first error is th using our best van 35) the signal of	(1285))/Γ _{tc} de by our be eir experime alue. bserved in t	$\left[btal ight] imes$ est valu ent's er he π^+	$[B(f_1(1285) \to \eta \pi^+ \pi^-$ e $B(f_1(1285) \to \eta \pi^+ \pi^-$ ror and our second error $\pi^- \eta$ invariant mass dist	`)] ⁻) is .ri-
$\Gamma(\phi f_1(1285) \rightarrow$	$\phi \pi^0 f_0(98)$	$\phi $ (0) $\rightarrow \phi \pi^0 \pi^+$	$\pi^{-})/\Gamma_{tot}$	al	Γ ₁₂₁ /	/Γ
VALUE (units 10^{-7})	EVTS	DOCUMEN	NT ID	TECN	COMMENT	
9.36±2.31±1.54	78	ABLIKIN	И 15Р	BES3	$J/\psi \rightarrow K^+ K^- 3\pi$	
$\Gamma(\phi f_1(1285) \rightarrow$	$\phi \pi^0 f_0(98)$	$(0) \rightarrow \phi 3\pi^0)/$	Γ _{total}		Γ ₁₂₂ /	/ Г
VALUE (units 10^{-7})	EVTS	DOCUMEN	NT ID	TECN	COMMENT	
$2.08 \pm 1.63 \pm 1.47$	9	ABLIKIN	I 15P	BES3	$J/\psi \rightarrow K^+ K^- 3\pi$	
$\Gamma(\phi\eta(1405) \rightarrow$	$\phi\eta\pi^+\pi^-$)/Γ _{total}			Γ ₁₂₃ /	/ Г
VALUE (units 10^{-5})	CL% EVTS	DOCUMEN	NT ID	TECN	COMMENT	
$2.01 \pm 0.58 \pm 0.82$	172	¹ ABLIKIN	1 15н	BES3	$e^+e^- ightarrow J/\psi ightarrow \phin\pi^+\pi^-$	
• • • We do not	use the follow	wing data for av	erages, fits,	limits,	etc. • • •	
< 17	90	² FALVARI	D 88	DM2	$J/\psi ightarrow$ hadrons	
1 With 3.6 σ sig 2 Includes unknown	gnificance. own branchir	ig fraction $\eta(140)$	D5) $\rightarrow \eta \pi \eta$	τ.	, ,	
Γ(<i>φf</i> ' ₂ (1525))/	Γ _{total}	·			Г124/	/Г
VALUE (units 10^{-4})	EVTS	DOCUMENT	ID	TECN	COMMENT	
8 ± 4 OUR A 12 3+0 6+2 0	VERAGE E	rror includes sca 1,2 FALVARD	ale factor of	2.7.	$1/n \rightarrow \text{ hadrons}$	—
4.8 ± 1.8	46	¹ GIDAL	81 N	MRK2	$J/\psi \rightarrow K^+ K^- K^+ K^-$	_
	using $P(f)$	$525) \sqrt{K}$	- 0.712		- 7 7 7 7 7 7 7 7	
	$\frac{1}{2}$	(1710)	= 0.713.			
Including inter	terence with	t ₀ (1710).				
Γ(~ Y(1835) _						/г

ι (ψ <i>X</i> (1000)	$\phi \psi \phi \phi \phi$ (vital)				' 125/ '
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT
<2.1 × 10 ⁻⁷	90	¹ ABLIKIM	16K	BES3	$\overline{J/\psi} \rightarrow p \overline{p} K^0_S K^0_L,$
					р <u></u> <i>Б К</i> + <i>К</i> -

¹Upper limit applies to any $p\overline{p}$ mass enhancement near threshold.



$\Gamma(\phi f_0(1710) \to \phi K \overline{K})$	/Γ _{total}					Г ₁₂₉ /Г
$VALUE$ (units 10^{-4})	DC	DCUMENT ID		TECN	COMMENT	
$3.6 \pm 0.2 \pm 0.6$	1,2 FA	LVARD	88	DM2	$J/\psi ightarrow$ hadro	ns
1 Including interference v	with $f'_{2}(1525)$).				
² Includes unknown bran	ching fraction	n f $_0(1710) \rightarrow$	κĪ	ζ.		
$\Gamma(\phi K^{\pm} K^0_S \pi^{\mp}) / \Gamma_{\text{total}}$						Г ₁₃₂ /Г
VALUE (units 10 ⁻⁴)	VTS DO	DCUMENT ID		TECN	COMMENT	
7.2 \pm 0.8 OUR AVERAGE						
7.4 \pm 0.6 \pm 1.4 227 \pm	: 19 Al	BLIKIM	08E	BES2	$e^+e^- \rightarrow J/\psi$	
$(.4 \pm 0.9 \pm 1.1)$	15 DI		88	DM2	$J/\psi \rightarrow$ hadron	S
$1 \pm 0.0 \pm 1.0$ 103 ±	: 15 BI	LCKER	87	WIRK3	$e e \rightarrow nadr$	ons
$\Gamma(\phi K^*(892)\overline{K} + \text{c.c.})/$	Γ _{total}					Г ₁₃₃ /Г
VALUE (units 10^{-4}) E	VTS DC	DCUMENT ID		TECN	COMMENT	
21.8 \pm 2.3 OUR AVERAGE						
$20.8 \pm 2.7 \pm 3.9$ 195 ±	: 25 Al	BLIKIM	08E	BES2	$J/\psi \rightarrow \phi K_{S}^{0} K$	$(\pm \pi^+)$
$29.6 \pm 3.7 \pm 4.7$ $238 \pm$: 30 Al	BLIKIM	08E	BES2	$J/\psi \rightarrow \phi K^+ F$	$\langle -\pi^0$
$20.7 \pm 2.4 \pm 3.0$	FA		88	DM2	$J/\psi \rightarrow$ hadron	S
$20 \pm 3 \pm 3$ 155 ±	: 20 Bi	ECKER	87	MRK3	$e \cdot e \rightarrow hadr$	ons
$\Gamma(b_1(1235)^{\pm}\pi^{\mp})/\Gamma_{\text{tot}}$	al					Г ₁₃₄ /Г
$\frac{VALUE \text{ (units } 10^{-4}\text{)}}{20 \text{ L} \text{ F} \text{ OUD } \text{ AV(FDACE}}$	VTS DC	DCUMENT ID		TECN	COMMENT	
	600 AI		00		$1/_{2}$ > $2(-+)$	0
31 ± 0 4 20+7	000 AU 87 BI		09 77n		$J/\psi \rightarrow 2(\pi + e^{-})$	π)π-
2911	01 D	JINNESTER	110	I LOI	ee	
$\Gamma(b_1(1235)^0\pi^0)/\Gamma_{\text{total}}$	l					Г ₁₃₅ /Г
VALUE (units 10 ⁻⁴)	VTS <u>D</u> C	DCUMENT ID		TECN	COMMENT	
23±3±5	229 Al	JGUSTIN	89	DM2	e^+e^-	
Г(Л(1232)+л)/Г						Г127/Г
	~1% D(CLIMENT ID		TECN	COMMENT	. 12//.
<0.1 x 10 ⁻³	<u>и н</u>	ENRARD	87	DM2		
			01	DIVIZ		
$\Gamma(\Delta(1232)^{++}\overline{p}\pi^{-})/\Gamma$	total					Г ₁₃₈ /Г
VALUE (units 10 ⁻³)	VTS DO	OCUMENT ID		TECN	COMMENT	
$1.58 {\pm} 0.23 {\pm} 0.40$	332 EA	ATON	84	MRK2	e^+e^-	
$\Gamma(\Lambda(1232)^{++}\overline{\Lambda}(1232)^{++})$))/Г					Г120/Г
(-(1-3))				TECN	COMMENT	. 128/ .
1 10 1 0 00 1 0 28	$\frac{V15}{D0}$		0.4			
ΤΤΛ ΞΛΥΛΑΞΛΥ <u>Σ</u>	233 EA	AT UN	ō4	Ινίκκ2	e' e	
$\Gamma(\overline{\Sigma}(1385)^0 p K^-) / \Gamma_{\rm tc}$	tal					Г ₁₄₀ /Г
VALUE (units 10^{-3}) E	VTS DO	OCUMENT ID		TECN	COMMENT	

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$\Gamma(\Sigma(1385)^{0}\overline{A} + cc$	•)/г					Γ141/Γ
		DOCUMENT ID		TECN	COMMENT	• 141/•
<pre>//ALUL // ALUL //</pre>	00		12	REC2	$\frac{1}{1}$	<i>π</i> ⁻ α α
• • • We do not use t	90 the followir	ADLINIVI ag data for averages	13F s fits	limits e	$J/\psi \rightarrow pp\pi^{+}$	π γγ
			s, mus,			
$<0.2 \times 10^{-3}$	90	HENRARD	87	DM2	e⊤e [−]	
$\Gamma(\Sigma(1385)^{-}\overline{\Sigma}^{+}+$	c.c.)/Г _{to}	tal				Г ₁₄₂ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT	
0.30 ± 0.07 OUR AVE	RAGE				1	
$0.30 \pm 0.03 \pm 0.08$	74 ± 8	HENRARD	87	DM2	e ⁺ e ⁻	
$0.29 \pm 0.11 \pm 0.10$	26	EATON	84	MRK2	e⊤ e¯	
$\Gamma(\Sigma(1385)^+\overline{\Sigma}^- +$	c.c.)/Г _{to}	tal				Г ₁₄₃ /Г
<u>VALUE (units 10^{-3})</u>	EVTS	DOCUMENT ID		TECN	COMMENT	
0.33 ± 0.08 OUR AVE	RAGE		~-	5146	<u>н</u>	
$0.34 \pm 0.04 \pm 0.08$	77	HENRARD	87	DM2	e+ e_ + _	
$0.31 \pm 0.11 \pm 0.11$	28	EATON	84	MRK2	e'e	
Γ(Σ(1385)⁻Σ(138	85) ⁺ + c.	c.)/Г _{total}				Г ₁₄₄ /Г
VALUE (units 10^{-3})	<u>EVTS</u>	DOCUMENT ID	TECN	COMM	IENT	
1.08 ± 0.06 OUR AV	ERAGE			1		
$1.096 \pm 0.012 \pm 0.071$	43k A	ABLIKIM 16L	BES3	e⊤e _		
$1.23 \pm 0.07 \pm 0.30$	0.8k A	ABLIKIM 12P	BES2	e⊤e ⊥	_	
$1.00 \pm 0.04 \pm 0.21$	0.6k F	HENRARD 87	DM2	e'e - + -	_	
$0.86 \pm 0.18 \pm 0.22$	50 E	ATON 84	MRK	2 e'e		
$\Gamma(\Sigma(1385)^+\overline{\Sigma}(1385))$	85) [—] + c.	c.)/Γ _{total}				Г ₁₄₅ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT	
1.25 ± 0.07 OUR AV	ERAGE					
$1.258\!\pm\!0.014\!\pm\!0.078$	53k	ABLIKIM	16L	BES3	e ⁺ e ⁻	
$1.50 \pm 0.08 \pm 0.38$	1k	ABLIKIM	12P	BES2	e ⁺ e ⁻	
$1.19 \pm 0.04 \pm 0.25$	0.7k	HENRARD	87	DM2	e ⁺ e ⁻	
$1.03 \pm 0.24 \pm 0.25$	68	EATON	84	MRK2	e ⁺ e ⁻	
Γ(Σ(1385) ⁰ Σ(138	5) ⁰)/Γ _{tot}	tal				Г ₁₄₆ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT	
$1.071 \pm 0.009 \pm 0.082$	103k	ABLIKIM	17E	BES3	$e^+e^- ightarrow J/\psi$ hadrons	\rightarrow
$\Gamma(\Lambda(1520)\overline{\Lambda} + cc)$	$\rightarrow \gamma \Lambda \overline{\Lambda}$	/Г				Γ147/Γ
	(1%) (1%)			TECN	COMMENT	• 147/•
<u>~4 1 × 10=6</u>	00		120	RES3	$\frac{1}{2}$	
∠ 4.1 ∧ 1V ·	90	ADLINIVI	IZD	0133	$J/\psi \rightarrow M/\gamma$	
$\Gamma(\overline{\Lambda}(1520)\Lambda + c.c.)$						Γ149/Γ
VALUE		DOCUMENT ID		TECN	COMMENT	1-10/ -
<1.80 × 10 ⁻³	90	10	19	BELL	$B^+ \rightarrow \overline{P}\Lambda K^+$	к+
	50	20	19	JELL	2 / p///	

$\Gamma(\Xi^0\overline{\Xi}^0)/\Gamma_{total}$					Г ₁₄₉ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.17 \pm 0.04 OUR A	/ERAGE				1 .
$1.165 \pm 0.004 \pm 0.043$	135k	ABLIKIM	17E	BES3	$e^+e^- \rightarrow J/\psi \rightarrow$
$1.20\ \pm 0.12\ \pm 0.21$	206	ABLIKIM	080	BES2	$e^+e^- ightarrow J/\psi$
Γ(Ξ(1530) ⁻ Ξ ⁺ +	c.c.)/Г _{tot}	tal			Г ₁₅₀ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
0.318 ± 0.008 OUR A	/ERAGE				1
$0.317 \pm 0.002 \pm 0.008$	70k	ABLIKIM	20	BES3	$e^+e^- \rightarrow J/\psi$
$0.59 \pm 0.09 \pm 0.12$	75	HENRARD	87	DM2	e⊤ e¯
$\Gamma(\Xi(1530)^0\overline{\Xi}^0)/\Gamma$	total				Г ₁₅₁ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
$0.32 {\pm} 0.12 {\pm} 0.07$	24 ± 9	HENRARD	87	DM2	e ⁺ e ⁻
$\Gamma(\Theta(1540)\overline{\Theta}(1540)$	<u>, ע</u> וו	K==)/F	_		Г/Г
			otal	TECN	1 152/1
<u>VALUE</u>	<u> </u>	DOCUMENT ID	040		<u>COMMENT</u> + -
<1.1 × 10 °	90	BAI	04G	BES2	e'e
$\Gamma(\Theta(1540)K^{-}\overline{n}-$	$ K_{c}^{0} p K^{-}$	$(\overline{n})/\Gamma_{total}$			Г153/Г
VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<2.1 × 10 ⁻⁵	90	BAI	0 4G	BES2	e+e-
Г(Q (1540) <i>К</i> ⁰ , д_	к <u>0</u> лк+	⁻ n)/Γ			Γιεα /Γ
				TECN	• 134/ •
<1 6 × 10 ⁻⁵	00	BAL	040	RES2	
1.0 × 10	90	DAI	040	DLJZ	ee
$\Gamma(\overline{\Theta}(1540)K^+n -$	→ K ⁰ _S pK ⁺	[⊢] n)/Г _{total}			Γ ₁₅₅ /Γ
VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$< 5.6 \times 10^{-5}$	90	BAI	0 4G	BES2	e^+e^-
Г(<u>Ө</u> (1540) <i>К</i> ⁰ <i>р</i> –					Г156/Г
VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.1 × 10 ⁻⁵	90	BAI	04G	BES2	e ⁺ e ⁻
.					
$\Gamma(2(\pi^{+}\pi^{-})\pi^{0})/\Gamma$	total				Г ₁₅₇ /Г
VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
4.2 \pm 0.4 OUR AVE	RAGE Err	or includes scale fa	ctor o	f 2.1. S	ee the ideogram below.
$5.44 \pm 0.07 \pm 0.33$	23K	ANASHIN	22	KEDR	$J/\psi \rightarrow 2(\pi^+\pi^-)\pi^0$
$3.5 \pm 0.8 \pm 0.1$	14k	+ LEES	21	BABR	$\frac{10.6 \ e^+ e^-}{2(\pi^+ \pi^-) 2\pi^0}$
4.73+0.44	228k	² ABLIKIM	19 0	BES3	$\frac{2(\pi + \pi -)3\pi}{2(\pi + \pi -)\pi}0$
3.25 ± 0.49	46055	AUGUSTIN	89	DM2	$J/\psi \rightarrow 2(\pi^+\pi^-)\pi^0$
3.17±0.42	147	FRANKLIN	83	MRK2	$e^+e^- \rightarrow hadrons$
3.64 ± 0.52	1500	BURMESTER	77 D	PLUT	e ⁺ e ⁻
4 ±1	675	JEAN-MARIE	76	MRK1	e^+e^-

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- ¹LEES 21 reports $[\Gamma(J/\psi(1S) \rightarrow 2(\pi^+\pi^-)\pi^0)/\Gamma_{total}] \times [\Gamma(\psi(2S) \rightarrow e^+e^-)] \times [B(\psi(2S) \rightarrow J/\psi(1S)\pi^0\pi^0)] = (14.8 \pm 2.6 \pm 2.2) \times 10^{-3}$ keV which we divide by our best values $\Gamma(\psi(2S) \rightarrow e^+e^-) = 2.33 \pm 0.04$ keV, $B(\psi(2S) \rightarrow J/\psi(1S)\pi^0\pi^0) = (18.2 \pm 0.5) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.
- ² From an energy scan of $e^+e^- \rightarrow J/\psi \rightarrow 2(\pi^+\pi^-)\pi^0$, assuming PDG 16 values for $\Gamma(e^+e^-)$, $\Gamma(\mu^+\mu^-)$, and $\Gamma(\text{total})$, and for a phase difference between strong and electromagnetic amplitudes of $(84.9 \pm 3.6)^\circ$. An alternative solution is $(4.85 \pm 0.45)\%$ with a phase of $(-84.7 \pm 3.1)^\circ$.



• (•(* *)*)/•	total					- 190/ -
VALUE	EVTS	DOCUMENT ID		TECN	COMMENT	
0.029±0.006 OUR A	VERAGE					
$0.028 \!\pm\! 0.009$	11	FRANKLIN	83	MRK2	$e^+e^- ightarrow$	hadrons
$0.029\!\pm\!0.007$	181	JEAN-MARIE	76	MRK1	e^+e^-	

 $\Gamma(\pi^+\pi^-\pi^0)/\Gamma_{\text{total}}$

 Γ_{163}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
20.0 ± 0.7 OUR A	VERAGE	Error includes	scale	factor of	2.0. See the ideogram below.
$18.78\!\pm\!0.13\!\pm\!0.51$	19.8k	¹ ANASHIN	23	KEDR	$e^+e^- \rightarrow J/\psi \rightarrow \pi^+\pi^-\pi^0$
$21.37 \!\pm\! 0.04 \!+\! 0.64 \!-\! 0.62$	1.8M	² ABLIKIM	12H	BES3	$e^+e^- \rightarrow J/\psi \rightarrow \pi^+\pi^-\pi^0$
$23.0 \ \pm 2.0 \ \pm 0.4$	256	³ AUBERT	07 AU	BABR	10.6 $e^+e^- \rightarrow J/\psi \pi^+\pi^-\gamma$
$21.84 \!\pm\! 0.05 \!\pm\! 2.01$	220k ⁴	^{4,5} BAI	04н	BES	e^+e^-
$20.91\!\pm\!0.21\!\pm\!1.16$!	^{5,6} BAI	04н	BES	e^+e^-
15 ±2	168	FRANKLIN	83	MRK2	e ⁺ e ⁻

- 1 By a simultaneous fit of the $\pi\pi$ invariant mass distribution over the decay modes $J/\psi o$ $\rho^{0}\pi^{0}$, $J/\psi \rightarrow \rho^{+}\pi^{-}$, $J/\psi \rightarrow \rho^{-}\pi^{+}$. In the fit only the intermediate states $\rho(770)\pi$ and $\rho(1450)\pi$ are considered.
- 2 The quoted systematic error includes a contribution of 1.23% (added in quadrature) from the uncertainty on the number of J/ψ events.
- AUBERT 07AU reports $[\Gamma(J/\psi(1S) \rightarrow \pi^+\pi^-\pi^0)/\Gamma_{total}] \times [\Gamma(\psi(2S) \rightarrow J/\psi(1S)\pi^+\pi^-) \times \Gamma(\psi(2S) \rightarrow e^+e^-)/\Gamma_{total}] = (18.6 \pm 1.2 \pm 1.1) \times 10^{-3} \text{ keV which}$ ³AUBERT 07AU reports [$\Gamma(J/\psi(1S) \rightarrow$ we divide by our best value $\Gamma(\psi(2S) \rightarrow J/\psi(1S)\pi^+\pi^-) \times \Gamma(\psi(2S) \rightarrow e^+e^-)/\Gamma_{\text{total}} = 0.808 \pm 0.014 \text{ keV}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. 4 From $J/\psi \rightarrow \pi^+\pi^-\pi^0$ events directly.
- ⁵ Mostly $\rho\pi$, see also $\rho\pi$ subsection.

⁶Obtained comparing the rates for $\pi^+\pi^-\pi^0$ and $\mu^+\mu^-$, using J/ψ events produced via $\psi(2S) \rightarrow \pi^+ \pi^- J/\psi$ and with B $(J/\psi \rightarrow \mu^+ \mu^-) = 5.88 \pm 0.10\%$.



$$\begin{array}{c|c} I \left(\pi^{+} \pi^{-} \pi^{0} K^{+} K^{-} \right) / I_{\text{total}} & I_{165} / I_{165} / I_{152\pm 0.27} \\ \hline \\ \hline \\ \hline \\ I.52\pm 0.27 \text{ OUR AVERAGE} & Error includes scale factor of 1.4. \\ \hline \\ I.74\pm 0.08\pm 0.24 & 2616 & ANASHIN & 22 & KEDR & J/\psi \rightarrow K^{+} K^{-} \pi^{+} \pi^{-} \pi^{0} \\ \hline \\ I.2 \pm 0.3 & 309 & VANNUCCI & 77 & MRK1 & e^{+}e^{-} \end{array}$$

$\Gamma(\pi^+\pi^-)/\Gamma_{\rm tota}$	l.					Г ₁₆₆ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT	
1.47±0.14 OUR A	VERAGE					
$1.47 \pm 0.13 \pm 0.13$	140	¹ METREVELI	12		$\psi(2S) \rightarrow$	$2(\pi^{+}\pi^{-})$
$1.58 \pm 0.20 \pm 0.15$	84	BALTRUSAIT	85 D	MRK3	e ⁺ e ⁻	()
1.0 ± 0.5	5	BRANDELIK	78 B	DASP	e^+e^-	
1.6 ± 1.6	1	VANNUCCI	77	MRK1	e^+e^-	
1 Obtained by ar	nalyzing CLE	O-c data but not au	thored	by the (CLEO Colla	boration.
$\Gamma(2(\pi^+\pi^-))/\Gamma_0$	total					Г ₁₆₇ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TEC	IN CON	AMENT	
3.20±0.25 OUR A	VERAGE E	rror includes scale fa	actor c	of 1.2.		
$2.88 \pm 0.14 \pm 0.24$	2654	ANASHIN 22	KE	DR J/v	$b \rightarrow 2(\pi^+)$	π^{-})
$3.53 \pm 0.12 \pm 0.29$	1107	^L ABLIKIM 05	H BE	S2 e ⁺	$e^- \rightarrow \psi(2)$	$(2S) \rightarrow$
					$J/\psi \pi^+ \pi^-$, $J/\psi \rightarrow$
					$2(\pi^{+}\pi^{-})$, - , ,
4.0 ±1.0	76	JEAN-MARIE 76	MR	K1 e+	e	
¹ Computed usin	ig B($J/\psi ightarrow$	$\mu^+\mu^-) = 0.0588$	\pm 0.00)10.		
$\Gamma(3(\pi^{+}\pi^{-}))/\Gamma_{-}$	total					Г <u>169</u> /Г
$V(4) UE (unite 10^{-4})$		DOCUMENT ID	TE			100/
VALUE (UNITS 10 ·)	<u>EV15</u>	DOCOMENTID	<u>1EC</u>	<u>.N COM</u>		
• • • We do not u	use the follow	ing data for average	es, tits,	limits, e	etc. • • •	
40±20	32	JEAN-MARIE 76	MR	K1 e ⁺	e	
$\Gamma\bigl(4(\pi^+\pi^-)\pi^0\bigr)$	/Γ _{total}					Г ₁₇₀ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT	
90±30	13	JEAN-MARIE	76	MRK1	e ⁺ e ⁻	
$\Gamma(2(\pi^+\pi^-)n)/$	[Г171 /Г
			TECN			• 1/1/•
$\frac{VALUE (units 10^{-9})}{2.20\pm0.28}$		DOCUMENT ID	TECN		VIENT	
2.29±0.20 UUR A				D 106	_+ \	
$5.1 \pm 1.5 \pm 0.1$	14K -	LEES 21	DAD	R 10.0 2($e e \rightarrow \pi^+ \pi^-$.0 ~
$2.26\!\pm\!0.08\!\pm\!0.27$	4.8k	ABLIKIM 05c	BES	$2 e^+e$	$^- ightarrow 2(\pi^-)$	$+\pi^{\prime}-$) η
¹ LEES 21 repor	ts $[\Gamma(J/\psi(15))]$	$5) \rightarrow 2(\pi^+\pi^-)\eta)$	$/\Gamma_{toto}$	_] × [Γ($J/\psi(1S) -$	$\rightarrow e^+e^-)$] ×
$[B(n \rightarrow 3\pi^0)]$	l = (5.6 + 2)	$2.6 \pm 0.8 \times 10^{-3}$	keV w	hich we	divide by o	ur best values
$\Gamma(J/\psi(1S) \rightarrow$	$e^+e^-) = 1$	5.53 + 0.10 keV. B	$(n \rightarrow $	$(3\pi^0) =$	(32.57 +)	$(0.21) \times 10^{-2}$
Our first error	is their expe	riment's error and	our see	cond err	or is the sy	stematic error
from using our	best values.					
$\Gamma(3(\pi^+\pi^-)\eta)/$	Г _{total}					Г ₁₇₂ /Г
VALUE (units 10^{-4})	FV/TS	DOCUMENT ID		TECN	COMMENT	/
$7.24 \pm 0.06 \pm 1.11$	616		050	RESO		$2(\pi^{+}\pi^{-})$
1.24±0.90±1.11	010	ADLINIVI	000	DE32	$e \cdot e \rightarrow$	$S(\pi + \pi - f)$

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$\Gamma(K^+K^-)/\Gamma_{\text{total}}$				Г ₁₇₆ /Г
VALUE (units 10 ⁻⁴)	EVTS	DOCUMENT ID	TECN	COMMENT
$2.86 {\pm} 0.09 {\pm} 0.19$	1k	¹ METREVELI 12		$\psi(2S) \rightarrow \pi^+ \pi^- K^+ K^-$
$\bullet \bullet \bullet$ We do not use	the follo	wing data for averages, t	fits, limit	s, etc. ● ● ●
$2.39 \pm 0.24 \pm 0.22$	107	² BALTRUSAIT85D	MRK3	e ⁺ e ⁻
2.2 ± 0.9	6	² BRANDELIK 79c	DASP	e ⁺ e ⁻

 1 Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.

²Interference with non-resonant K^+K^- production not taken into account.

$\Gamma(K_S^0 K_L^0) / \Gamma_{\text{total}}$

 Γ_{177}/Γ



$\Gamma(K_S^0 K_S^0) / \Gamma_{\text{total}}$	ll and a					Г ₁₇₈ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	<u>COMMENT</u>	0 0
<1.4 × 10 ⁻⁰	95	⁺ ABLIKIM	17AF	I BES3	$J/\psi \rightarrow F$	$K_{S}^{0}K_{S}^{0} \rightarrow$
• • • We do not u	se the following	, data for average	s fits	limits (π ⁺ π [−] ≏tc ●●●	$\pi^+\pi^-$
$ 1 \times 10^{-6} $			040	DEC		
$<1 \times 10^{-6}$	95		04D 85C	DE2	e ' e	
		DALINUSAN	050	WINNS	ee	
- Forbidden by C	Ρ.					
$\Gamma(K\overline{K}\pi)/\Gamma_{total}$						Г ₁₇₉ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT	
61 \pm 10 OUR A	VERAGE					
55.2 ± 12.0	25	FRANKLIN	83	MRK2	$e^+e^- \rightarrow$	$K^{+}K^{-}\pi^{0}$
78.0 ± 21.0	126	VANNUCCI	77	MRK1	$e^+e^- \rightarrow$	$K_S^0 K^{\pm} \pi^+$
$\Gamma(K^+K^-\pi^0)/\Gamma$	total					Г ₁₈₀ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT	
$2.88 \pm 0.01 \pm 0.12$	183k	ABLIKIM	19AG) BES	$J/\psi ightarrow H$	$\kappa^+ \kappa^- \pi^0$
$\Gamma(K^+K^-\pi^0)/\Gamma$	$(\pi^{+}\pi^{-}\pi^{0})$					Г ₁₈₀ /Г ₁₆₃
VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT	
$12.0 \pm 0.3 \pm 0.9$	23k	LEES	17C	BABR	$J/\psi ightarrow h$	$h^{+}h^{-}\pi^{0}$
$\Gamma(\kappa_{0}^{0}\kappa_{\pm}\pi_{\pm})/\Gamma$	$(\pi + \pi - \pi^0)$					F101 / F160
VALUE (%)		DOCUMENT ID		TECN	COMMENT	• 181/• 103
$26.5 \pm 0.5 \pm 2.1$	24k	LEES	170	BABR	2000000000000000000000000000000000000	$^{0}h^{+}h^{-}$
	.				- / + / -	· · · · ·
$\Gamma(K^+K^-\pi^+\pi^-$	΄)/Γ _{total}					Г ₁₈₅ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT	
7.04±0.26±0.92	2671	ANASHIN	22	KEDR	$J/\psi ightarrow K$	$K^{+}K^{-}\pi^{+}\pi^{-}$
• • • We do not u	se the following	g data for average	s, fits,	limits, e	etc. • • •	
7.2 ± 2.3	205	VANNUCCI	77	MRK1	e^+e^-	
$\Gamma(K^+K^-2(\pi^+))$	$\pi^{-}))/\Gamma_{total}$					Г ₁₉₇ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID	TI	ECN C	OMMENT	
31±13	30	VANNUCCI 7	7 M	IRK1 e	+ e-	
						- /-
$\Gamma(2(K^+K^-))/\Gamma$	total					₁₉₉ /
VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TECN	<u>COM</u>	MENT	
• • • We do not u	se the following	g data for average	s, fits,	limits, e	etc. • • •	
$1.4^{+0.5}_{-0.4}{\pm}0.2$	$11.0^{+4.3}_{-3.5}$ 1	HUANG 03	BEL	L <i>B</i> +	\rightarrow 2(K ⁺ k	<−) к+
0.7 ± 0.3		VANNUCCI 77	MR	<1 e ⁺ e	e	
1 Using B(B^+ –	$\rightarrow J/\psi K^+) =$	$(1.01\pm0.05) imes1$	0 ⁻³ .			

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$\Gamma(p\overline{p})/\Gamma_{total}$					Г ₂₀₇ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
2.120 ± 0.029 OUR AV	ERAGE				
$2.112\!\pm\!0.004\!\pm\!0.031$	314k	ABLIKIM	12C	BES3	e ⁺ e ⁻
$2.17 \ \pm 0.16 \ \pm 0.04$	317	¹ WU	06	BELL	$B^+ \rightarrow p \overline{p} K^+$
$2.26\ \pm 0.01\ \pm 0.14$	63316	BAI	04E	BES2	$e^+e^- ightarrow J/\psi$
1.97 ± 0.22	99	BALDINI	98	FENI	e ⁺ e ⁻
$1.91 \ \pm 0.04 \ \pm 0.30$		PALLIN	87	DM2	e ⁺ e ⁻
$2.16\ \pm 0.07\ \pm 0.15$	1420	EATON	84	MRK2	e ⁺ e ⁻
2.5 ± 0.4	133	BRANDELIK	79 C	DASP	e ⁺ e ⁻
2.0 ± 0.5		BESCH	78	BONA	e ⁺ e ⁻
2.2 ± 0.2	331	² PERUZZI	78	MRK1	e+e-
• • • We do not use t	he following	data for averages	, fits,	limits, e	tc. ● ● ●
2.0 ±0.3	48	ANTONELLI	93	SPEC	e ⁺ e ⁻
¹ WU 06 reports [Γ ($J/\psi(1S) \rightarrow$	$p\overline{p})/\Gamma_{total} \times$	[B(<i>B</i>	$^+ \rightarrow J$	$[/\psi(1S)K^+)] = (2.21 \pm$
$0.13\pm0.10)\times10$	-6 which w	e divide by our b	est v	alue B(<i>E</i>	$B^+ \rightarrow J/\psi(1S)K^+) =$
$(1.020\pm0.019) imes$	10^{-3} . Our f	irst error is their e	experi	ment's e	error and our second error
is the systematic er	ror from usin	ng our best value			
⁻ Assuming angular c	listribution ($1 + \cos^2 \theta$).			

$\Gamma(ho \overline{ ho} \pi^0) / \Gamma_{total}$					Г ₂₀₈ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.19±0.08 OUR AVER	AGE Erro	or includes scale fa	ctor c	f 1.1.	
$1.33\!\pm\!0.02\!\pm\!0.11$	11k	ABLIKIM	09 B	BES2	e ⁺ e ⁻
$1.13\!\pm\!0.09\!\pm\!0.09$	685	EATON	84	MRK2	e ⁺ e ⁻
$1.4 \hspace{0.1in} \pm 0.4$		BRANDELIK	79 C	DASP	e ⁺ e ⁻
1.00 ± 0.15	109	PERUZZI	78	MRK1	e ⁺ e ⁻
$\Gamma(ho\overline{ ho}\pi^+\pi^-)/\Gamma_{total}$					Г ₂₀₉ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
6.0 \pm 0.5 OUR AVER	AGE Erro	or includes scale fa	ctor c	f 1.3. Se	ee the ideogram below.
$6.46\!\pm\!0.17\!\pm\!0.43$	1435	EATON	84	MRK2	e ⁺ e ⁻
3.8 ± 1.6	48	BESCH	81	BONA	e ⁺ e ⁻
$5.5 \ \pm 0.6$	533	PERUZZI	78	MRK1	e ⁺ e ⁻





$\Gamma(p\overline{p}\phi)/\Gamma_{total}$					Г ₂₁₆ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
0.519 ± 0.033 OUR AVE	RAGE				
$0.523 \!\pm\! 0.006 \!\pm\! 0.033$	14k	ABLIKIM	16K	BES3	$J/\psi \to p\overline{p}K^0_S K^0_L,$
$0.45 \ \pm 0.13 \ \pm 0.07$		FALVARD	88	DM2	$J/\psi \rightarrow hadrons$
$\Gamma(ho \overline{n} \pi^-) / \Gamma_{ m total}$					Г ₂₁₇ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
2.12 ± 0.09 OUR AVER/	AGE				
$2.36\!\pm\!0.02\!\pm\!0.21$	59k	ABLIKIM	06 K	BES2	$J/\psi \rightarrow p\pi^-\overline{n}$
$2.47\!\pm\!0.02\!\pm\!0.24$	55k	ABLIKIM	06 K	BES2	$J/\psi ightarrow \overline{p}\pi^+$ n
$2.02\!\pm\!0.07\!\pm\!0.16$	1288	EATON	84	MRK2	$e^+e^- ightarrow p \pi^-$
$1.93\!\pm\!0.07\!\pm\!0.16$	1191	EATON	84	MRK2	$e^+e^- ightarrow \overline{p}\pi^+$
$1.7 \hspace{0.1in} \pm 0.7$	32	BESCH	81	BONA	$e^+e^- ightarrow p \pi^-$
1.6 ± 1.2	5	BESCH	81	BONA	$e^+e^- ightarrow \ \overline{p}\pi^+$
2.16 ± 0.29	194	PERUZZI	78	MRK1	$e^+e^- ightarrow p \pi^-$
2.04 ± 0.27	204	PERUZZI	78	MRK1	$e^+e^- \rightarrow \overline{p}\pi^+$
$\Gamma(n\overline{n})/\Gamma_{\text{total}}$					Г ₂₁₈ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
2.09±0.16 OUR AVER/	AGE				
$2.07\!\pm\!0.01\!\pm\!0.17$	36k	ABLIKIM	12C	BES3	e ⁺ e ⁻
2.31 ± 0.49	79	BALDINI	98	FENI	e ⁺ e ⁻
$1.8\ \pm 0.9$		BESCH	78	BONA	e ⁺ e ⁻
• • • We do not use th	e follow	ing data for averages	s, fits,	limits, e	etc. • • •
$1.90\!\pm\!0.55$	40	ANTONELLI	93	SPEC	e ⁺ e ⁻
$\Gamma(n\overline{n}\pi^+\pi^-)/\Gamma_{total}$					Г ₂₁₉ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
3.8±3.6	5	BESCH	81	BONA	e ⁺ e ⁻
$\Gamma(\Lambda\overline{\Lambda})/\Gamma_{\text{total}}$					Г ₂₂₃ /Г
$VALUE$ (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.88 \pm 0.08 OUR AVE	RAGE	Error includes scale	facto	r of 2.6.	See the ideogram below.
$1.64\ \pm 0.12\ \pm 0.09$		ABLIKIM	23S	BES3	$e^+e^- \rightarrow \gamma \Lambda \overline{\Lambda}$
$1.943\!\pm\!0.003\!\pm\!0.033$	441k	ABLIKIM	17L	BES3	e ⁺ e ⁻
$2.03 \ \pm 0.03 \ \pm 0.15$	8887	ABLIKIM	06	BES2	$J/\psi ightarrow \Lambda \overline{\Lambda}$
$1.96 \begin{array}{c} +0.47 \\ -0.44 \end{array} \pm 0.04$	46	1 WU	06	BELL	$B^+ \rightarrow \Lambda \overline{\Lambda} K^+$
$1.08\ \pm 0.06\ \pm 0.24$	631	BAI	98 G	BES	e ⁺ e ⁻
$1.38\ \pm 0.05\ \pm 0.20$	1847	PALLIN	87	DM2	e ⁺ e ⁻
$1.58\ \pm 0.08\ \pm 0.19$	365	EATON	84	MRK2	e ⁺ e ⁻
2.6 ± 1.6	5	BESCH	81	BONA	e ⁺ e ⁻
1.1 ± 0.2	196	PERUZZI	78	MRK1	e ⁺ e ⁻

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¹WU 06 reports $[\Gamma(J/\psi(1S) \rightarrow \Lambda\overline{\Lambda})/\Gamma_{total}] \times [B(B^+ \rightarrow J/\psi(1S)K^+)] =$ $(2.00^{+0.34}_{-0.29} \pm 0.34) \times 10^{-6}$ which we divide by our best value B($B^+ \to J/\psi(1S) K^+$) = $(1.020 \pm 0.019) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.



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 $4.30 \pm 0.13 \pm 0.99$

ABLIKIM

$\Gamma(\Lambda\overline{\Lambda}\eta)/\Gamma_{\text{total}}$				Г ₂₂₆ /Г
VALUE (units 10^{-5}) EV	TS DOCUMENT	D TEC	COMMENT	
16.2 \pm 1.7 OUR AVERAGE				
$15.7 \pm 0.80 \pm 1.54$ 45	54 ¹ ABLIKIM	13F BES	S3 $J/\psi \rightarrow p\overline{p}$	$\overline{\rho}\pi^+\pi^-\gamma\gamma$
26.2±6.0 ±4.4	4 ² ABLIKIM	07H BES	S2 $e^+e^- \rightarrow$	$\psi(2S)$
1 Using B($\Lambda ightarrow \pi^{-} p$) =	63.9% and B($\eta ightarrow$	$\gamma\gamma$) = 39.31%	<i>.</i>	
² Using B($\Lambda \rightarrow \pi^{-} p$) =	63.9% and B($\eta ightarrow$	$\gamma\gamma$) = 39.4%.		
$\Gamma(\Lambda \overline{\Sigma}^{-} \pi^{+} + \text{c.c.})/\Gamma_{\text{total}}$	I			Г ₂₂₇ /Г
VALUE (units 10 ⁻³)	EVTS DOCUME	NT ID TE	CN COMMENT	
1.26 \pm 0.05 OUR AVERAG	E Error includes s	cale factor of 2	1.2.	-
$1.244 \pm 0.002 \pm 0.045$ 2	2.6M ABLIKIN	1 23BUBE	e^+e^-	
$1.52 \pm 0.08 \pm 0.16$	589 ¹ ABLIKIN	1 07н BE	$S2 e^+e^-$	
$1.11 \pm 0.06 \pm 0.20$ 342 =	± 18 HENRAF	RD 87 DN	M2 e ⁺ e ⁻	
$1.38 \pm 0.21 \pm 0.35$	118 EATON	84 MI	RK2	
¹ Using B($\Lambda ightarrow \pi^{-} p$) =	63.9% and B(Σ^+ -	$\rightarrow \pi^0 p) = 51$.6%.	
$\Gamma(\Lambda \overline{\Sigma}^+ \pi^- + \text{c.c.})/\Gamma_{\text{total}}$	I			Г ₂₂₈ /Г
VALUE (units 10^{-3}) EV	TS DOCUMENT	ID <u>TEC</u>	COMMENT	
1.21 \pm 0.07 OUR AVERAG	E Error includes s	cale factor of 2	1.8.	-
$1.221 \pm 0.002 \pm 0.038$ 2.7	M ABLIKIM	23BU BES	S3 e^+e^-	
$0.90 \pm 0.06 \pm 0.16$ 22	25 HENRARD) 87 DM	$ 2 e^+e^-$	
$1.53 \pm 0.17 \pm 0.38$ 13	B5 EATON	84 MR	K2 e ⁺ e ⁻	
$\Gamma(\rho K^- \overline{\Lambda} + \text{c.c.}) / \Gamma_{\text{total}}$				Г ₂₂₉ /Г
VALUE (units 10^{-3}) EV	TS DOCUMENT	D TEC	<u>COMMENT</u>	
$0.86{\pm}0.11 \text{ OUR AVERAGE}$				
$0.84 \substack{+0.17 \\ -0.15} \pm 0.02$	15 ¹ LU	19 BEI	LL $B^+ \rightarrow \overline{p}/$	$\kappa^+\kappa^+$
$0.89 \pm 0.07 \pm 0.14$ 30	07 EATON	84 MR	:K2 e ⁺ e ⁻	
1 LU 19 reports (8.32 $^{+1}_{-1}$	$^{.63}_{.45}$ \pm 0.49) $ imes$ 10	⁴ from a mea	asurement of [Γ	$\left(J/\psi(1S) ight. ightarrow$
$pK^{-}\overline{\Lambda}+c.c.)/[t_{total}] \times$	$[B(B^+ \rightarrow J/\psi(15))]$	$(5) K^+$)] assum	ing B($B^+ \rightarrow$	$I/\psi(1S)K^{+})$
$= (1.026 \pm 0.031) \times 10^{-10}$	$^{-3}$ which we rescale	to our best v	alue B($B^+ \rightarrow$	$I/\psi(1.5)K^+$
$= (1.020 \pm 0.001) \times 10$	$^{-3}$. Our first error	is their experi	iment's error an	d our second
error is the systematic er	ror from using our l	best value.		
$\Gamma(ho K^- \overline{\Sigma^0}) / \Gamma_{\text{total}}$				Г ₂₃₀ /Г
VALUE (units 10^{-3}) EV	TS DOCUMENT	D TEC	COMMENT	
0.29±0.06±0.05	00 EATON	84 MR	K2 e^+e^-	
$\Gamma(\overline{\Lambda}nK_{S}^{0}+c.c.)/\Gamma_{total}$				Г ₂₃₁ /Г
VALUE (units 10^{-4}) EV	TS DOCUMENT	D TEC	N COMMENT	
6.46±0.20±1.07 105	¹ ABLIKIM	08c BE	S2 $e^+e^- \rightarrow$	J/ψ
¹ Using B($\overline{A} ightarrow \overline{p} \pi^+$) =	63.9% and $B(K_{S}^{0} -$	$\rightarrow \pi^+\pi^-) =$	69.2%.	, ,

$\Gamma(\Lambda \overline{\Sigma} + c.c.)/\Gamma_{tota}$	al						Г ₂₃₂ /Г
VALUE (units 10^{-5})	CL%	EVTS	DOCUME	NT ID		TECN	COMMENT
2.83±0.23 OUR A	WERAGE						
$2.74\!\pm\!0.24\!\pm\!0.22$	234	± 21	¹ ABLIKII	M	12B	BES3	$J/\psi \rightarrow \Lambda \overline{\Sigma}^0$
$2.92 \pm 0.22 \pm 0.24$	308	± 24	² ABLIKII	M	12B	BES3	$J/\psi \rightarrow \overline{\Lambda}\Sigma^0$
• • • We do not use	the follow	ing data fo	r averages	, fits,	limits,	etc. • •	•
<18			² HENRA	RD	87	DM2	$1/\eta \rightarrow \overline{\Lambda} \Sigma^0$
<15	90		PFRUZ	71	78	MRK1	$e^+e^- \rightarrow \Lambda X$
		. <u>↓</u> <u></u> 0)			2	
² ABLIKIM 12B quo by 2.	HENRAI	$p \rightarrow \pi 2^{\circ}$ RD 87 quot	e results f	or B(.	J/ $\psi ightarrow$	$\overline{\Lambda}\Sigma^0$) v	which we multiply
$\Gamma(\Sigma^+\overline{\Sigma}^-)/\Gamma_{total}$							Г ₂₃₃ /Г
VALUE (units 10^{-3})	EVTS	DOCU	IMENT ID		TECN	COMME	NT
1.07 ± 0.04 OUR A	/ERAGE						0 0
$1.061\!\pm\!0.004\!\pm\!0.036$	87k	ABLI	KIM	21AT	BES3	$J/\psi \rightarrow$	$\rightarrow p \pi^0 \overline{p} \pi^0$
$1.50 \pm 0.10 \pm 0.22$	399	ABLI	KIM	080	BES2	e ⁺ e ⁻	$\rightarrow J/\psi$
$\Gamma(\Sigma^0\overline{\Sigma}^0)/\Gamma_{ ext{total}}$							Г ₂₃₄ /Г
VALUE (units 10^{-3})	EVTS	DOCUM	ENT ID	7	ECN	COMMEN	Т
1.172 ± 0.032 OUR AV	/ERAGE	Error inclu	ides scale	factor	r of 1.4		
$1.164 \pm 0.004 \pm 0.023$	111k	ABLIK	IM 1	7L E	BES3	$J/\psi \rightarrow$	$\Sigma^0 \overline{\Sigma}^0$
$1.33\ \pm 0.04\ \pm 0.11$	1.7k	ABLIK	IM 0	6 E	BES2	$J/\psi \rightarrow$	$\Sigma^0 \overline{\Sigma}^0$
$1.06\ \pm 0.04\ \pm 0.23$	884	PALLI	8 ا	7 C	DM2	e ⁺ e ⁻ -	$\rightarrow \Sigma^{0} \overline{\Sigma}^{0}$
$1.58\ \pm 0.16\ \pm 0.25$	90	EATO	8 ا	4 N	/IRK2	e+e	$\rightarrow \Sigma^{0}\overline{\Sigma}^{0}$
1.3 ± 0.4	52	PERUZ	ZZI 7	8 N	/IRK1	e ⁺ e ⁻ -	$\rightarrow \Sigma^0 \overline{\Sigma}^0$
$\bullet \bullet \bullet$ We do not use	the follow	ing data fo	r averages	, fits,	limits,	etc. • •	•
2.4 ±2.6	3	BESCH	H 8	1 B	BONA	e ⁺ e ⁻ -	$\rightarrow \Sigma^+ \overline{\Sigma}^-$
$\Gamma(\Sigma^+\overline{\Sigma}^-\eta)/\Gamma_{\rm tota}$	I						Г ₂₃₅ /Г
VALUE (units 10^{-5})	EVTS	DOCU	IMENT ID		TECN	COMME	NT
$6.34 {\pm} 0.21 {\pm} 0.37$	1821	ABLI	KIM	22AY	BES3	$J/\psi ightarrow$	$\rightarrow \Sigma^+ \overline{\Sigma}^- \eta$
$\Gamma(\Xi^-\overline{\Xi}^+)/\Gamma_{total}$							Г ₂₃₆ /Г
VALUE (units 10^{-3})	EVTS	DOCU	MENT ID		TECN	COMME	NT
0.97 ± 0.08 OUR A	/ERAGE	Error inclu	ides scale	factor	r of 1.4	See the	e ideogram below.
$1.040 \pm 0.006 \pm 0.074$	43k	ABLI	KIM	16L	BES3	$J/\psi \rightarrow$	→ <u>=</u> = = /
$0.90 \pm 0.03 \pm 0.18$	961	ABLI	KIM	12P	BES2	$J/\psi \rightarrow$	→ <u>=</u> = <u>=</u> ,
$0.70 \pm 0.06 \pm 0.12$	132	HEN	RARD	87	DM2	e ⁺ e ⁻	$\rightarrow \Xi^- \Xi^+$
$1.14 \pm 0.08 \pm 0.20$	194	EAT	ON	84	MRK2	e ⁺ e ⁻	$\rightarrow \Xi^- \Xi^+$
1.4 ± 0.5	51	PERI	JZZI	78	MRK1	e ⁺ e ⁻	$\rightarrow \Xi^-\Xi^+$

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$\Gamma(4\gamma)/\Gamma_{total}$					Г ₂₄₁ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT
<9 × 10 ⁻⁶	90	ADAMS	08	CLEO	$\psi(2S) \rightarrow \pi^+ \pi^- J/\psi$
$\Gamma(5\gamma)/\Gamma_{total}$					Г ₂₄₂ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT
<15 × 10 ⁻⁶	90	ADAMS	08	CLEO	$\psi(2S) \rightarrow \pi^+ \pi^- J/\psi$
$\Gamma(\gamma \pi^0)/\Gamma_{ m total}$					Г ₂₄₃ /Г
VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
3.39 ± 0.08 OUR AVE	RAGE				
$3.34\!\pm\!0.02\!\pm\!0.09$	176k	ABLIKIM	23BD	BES3	$J/\psi \rightarrow \pi^0 \gamma$
$3.59\!\pm\!0.20\!\pm\!0.04$	1.6k	¹ ABLIKIM	180	BES3	$\psi(2S) \rightarrow \pi^+ \pi^- \gamma \gamma \gamma$
$3.63\!\pm\!0.36\!\pm\!0.13$		PEDLAR	09	CLE3	$J/\psi \rightarrow \pi^0 \gamma$
$3.13^{+0.65}_{-0.47}$	586	ABLIKIM	06e	BES2	$J/\psi \rightarrow \pi^0 \gamma$
\bullet \bullet \bullet We do not use	the following	g data for averages	s, fits,	limits, e	etc. • • •
$\begin{array}{rrrr} 3.6 & \pm 1.1 & \pm 0.7 \\ 7.3 & \pm 4.7 \end{array}$	10	BLOOM BRANDELIK	83 79c	CBAL DASP	e ⁺ e ⁻ e ⁺ e ⁻
¹ ABLIKIM 180 re	ports $[\Gamma(J/u]]$	$\psi(1S) \rightarrow \gamma \pi^0)/l$	Γτοτοί	1 × [B($(\pi^0 \to 2\gamma) = (3.57 +$

ABLIKIM 180 reports $[\Gamma(J/\psi(1S) \rightarrow \gamma \pi^0)/\Gamma_{\text{total}}] \times [B(\pi^0 \rightarrow 2\gamma)] = (3.57 \pm 0.12 \pm 0.16) \times 10^{-5}$ from a measurement of $[\Gamma(J/\psi(1S) \rightarrow \gamma \pi^0)/\Gamma_{\text{total}}] \times [B(\pi^0 \rightarrow 2\gamma)] \times [B(\psi(2S) \rightarrow J/\psi(1S)\pi^+\pi^-)]$ assuming $B(\psi(2S) \rightarrow J/\psi(1S)\pi^+\pi^-) = (34.49 \pm 0.30) \times 10^{-2}$, which we rescale to our best values $B(\pi^0 \rightarrow 2\gamma) = (98.823 \pm 0.034) \times 10^{-2}$, $B(\psi(2S) \rightarrow J/\psi(1S)\pi^+\pi^-) = (34.69 \pm 0.34) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our based on the systematic error from best values.

$\Gamma(\gamma \pi^0 \pi^0) / \Gamma_{\text{total}}$

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
1.15±0.05	¹ ABLIKIM	15AE BES3	$J/\psi \rightarrow \gamma \pi^0 \pi^0$

¹The uncertainty is systematic as statistical is netligible.

$\Gamma(\gamma 2\pi^+ 2\pi^-)/\Gamma_{ ext{total}}$						Г ₂₄₅ /Г
VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMEN	T	
2.8 \pm 0.5 OUR AVERAGE	Error includes scale fa	ctor o	f 1.9. Se	ee the ide	ogram	below.
$4.32\!\pm\!0.14\!\pm\!0.73$	¹ BISELLO	89 B	DM2	$J/\psi \rightarrow$	$4\pi\gamma$	
$2.08\!\pm\!0.13\!\pm\!0.35$	² BISELLO	89 B	DM2	$J/\psi \rightarrow$	$4\pi\gamma$	
$3.05\!\pm\!0.08\!\pm\!0.45$	² BALTRUSAIT.	. .86 В	MRK3	$J/\psi \rightarrow$	$4\pi\gamma$	
$4.85\!\pm\!0.45\!\pm\!1.20$	³ BURKE	82	MRK2	e ⁺ e ⁻		
$^1_{-}4\pi$ mass less than 3.0 Ge	V.					

 $^{2}4\pi$ mass less than 2.0 GeV. $^{3}4\pi$ mass less than 2.5 GeV.

 Γ_{244}/Γ



 $^1_2\,{\rm For}$ a broad structure around 1800 MeV. $^2_2\,{\rm For}$ a broad structure around 2040 MeV.

$\Gamma(\gamma K^+ K^- \pi^+ \pi^-)$)/Γ _{total}					Г ₂₅₁ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT	
$2.1 {\pm} 0.1 {\pm} 0.6$	1516	BAI	00 B	BES	$J/\psi \rightarrow \gamma K^+ K$	$(0_{\pi} + \pi^{-})$
Γ(<i>γ K</i> *(892) <i>K</i> *(89))/Γ _{tot}	al				Г ₂₅₂ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT	
4.0±0.3±1.3	320	¹ BAI	00 B	BES	$J/\psi \rightarrow \gamma K^+ k$	$(0_{\pi}^{+}\pi^{-})$
¹ Summed over all c	harges.				, , ,	
$\Gamma(\gamma \eta) / \Gamma_{\text{total}}$						Г ₂₅₃ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT	
1.090±0.013 OUR AV	/ERAGE					
$1.096 \pm 0.001 \pm 0.019$	2.2M	ABLIKIM	23 B	D BES3	$J/\psi ightarrow \eta \gamma$	
$1.067 \!\pm\! 0.005 \!\pm\! 0.023$	87.9k	ABLIKIM	21A	мBES3	$e^+e^- \rightarrow J/$	ψ
$1.12\ \pm 0.05\ \pm 0.01$	18.6k	¹ ABLIKIM	180	BES3	$\psi(2S) \rightarrow \pi^+$	$\pi^-\gamma\gamma\gamma$
$1.101\!\pm\!0.029\!\pm\!0.022$		PEDLAR	09	CLE3	$J/\psi \rightarrow \eta \gamma$	
1.123 ± 0.089	11k	ABLIKIM	06e	BES2	$J/\psi ightarrow \eta \gamma$	
• • • We do not use	the followi	ng data for averag	es, fits	, limits,	etc. • • •	
$0.88 \pm 0.08 \pm 0.11$		BLOOM	83	CBAL	e ⁺ e ⁻	
0.82 ± 0.10		BRANDELIK	79 C	DASP	o e ⁺ e [−]	
1.3 ±0.4	21	BARTEL	77	CNTF	e^+e^-	
¹ ABLIKIM 180 rep	orts $[\Gamma(I)]$	$\psi(1S) \rightarrow \gamma n / \Gamma$	l ×	< [B(n -	$\rightarrow 2\gamma$] = (4.42	+ 0.04 +
$0.18) \times 10^{-4}$ from		rement of $[\Gamma(1/a)($	15) _	$\sim (-(n)/(n))/(n)$	$[\Gamma] \rightarrow [R(n)]$	$\rightarrow 2 \approx 1 \times 2 \approx 1 \times 1$
$[\mathbf{P}(\cdot)(2\mathbf{C})] \rightarrow 1(\cdot)$	$(1 c) = \pm -$	()	10) ())	/ (I''')/ \\ I/a	(1 c) = +)	
$[B(\psi(25) \rightarrow J/\psi = 0.20) \times 10^{-2} \text{ wh}$	$(15)\pi \cdot \pi$	г)] assuming В(ų	v(25)	$\rightarrow J/\eta$	$p(15)\pi + \pi = (20.26)$	$(34.49 \pm$
$(0.30) \times 10^{-1}$, where $(0.30) \times 10^{-1}$	icn we res	scale to our best $\sqrt{24}$	aiues	$B(\eta \rightarrow 10) \times 10$	$2\gamma) = (39.30)$	± 0.18) ×
10 -, $B(\psi(25) \rightarrow \psi(25))$	$\rightarrow J/\psi(13)$	$\pi \pi = (34.09)$	$t \pm 0.3$	$(54) \times 10$	from using our b	ror is their est values
			stemat		from using our b	
$\Gamma(\gamma\eta\pi^{0})/\Gamma_{\text{total}}$						l ₂₅₄ /l
VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT	
$21.4 \pm 1.8 \pm 2.5$	596	ABLIKIM	16P	BES3	$J/\psi ightarrow 5\gamma$	
$\Gamma(\gamma a_0(980)^0 \rightarrow \gamma \eta)$	$\eta \pi^0)/\Gamma_{tc}$	otal				Г ₂₅₈ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT	
<2.5 × 10 ⁻⁶	95	ABLIKIM	16P	BES3	$J/\psi ightarrow 5\gamma$	
$\Gamma(\gamma a_2(1320)^0 \rightarrow \gamma$	$(\eta \pi^0)/\Gamma$	total				Г ₂₅₉ /Г
VALUE	CL%	DOCUMENT ID		TECN	COMMENT	,
<6.6 × 10 ⁻⁶	95	ABLIKIM	16 P	BES3	$J/\psi ightarrow 5\gamma$	
$\Gamma(\gamma \eta \pi \pi) / \Gamma_{\text{total}}$						Г ₂₆₀ /Г
VALUE (units 10^{-3})		DOCUMENT ID		TECN	COMMENT	-
6.1 ±1.0 OUR AVER	AGE					
$5.85 \pm 0.3 \pm 1.05$		¹ EDWARDS	83 B	CBAL	$J/\psi \rightarrow \eta \pi^+$	π^{-}
$7.8 \pm 1.2 \pm 2.4$		¹ EDWARDS	83 B	CBAL	$J/\psi \rightarrow n2\pi^0$	
1 Broad enhancemen	nt at 1700	MeV			, , , , , , ,	
	n at 1700	IVICV.				

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$\Gamma(\gamma \eta_2(1870) \rightarrow$	$\gamma\eta\pi^+\pi^-$	⁻)/Γ _{total}			Г ₂₆₁ /Г
VALUE (units 10^{-4})		DOCUMENT I	ס	TECN	COMMENT
6.2±2.2±0.9		BAI	99	BES	$J/\psi \rightarrow \gamma \eta \pi^+ \pi^-$
$\Gamma(\gamma \eta'(958))/\Gamma_{tc}$	otal				Г ₂₆₂ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
5.28±0.06 OUR A	VERAGE	Error includes scale	factor	of 1.3.	See the ideogram below.
$5.40\!\pm\!0.01\!\pm\!0.11$	638k	ABLIKIM	23BD	BES3	$J/\psi ightarrow \gamma \eta^{\prime}$
$5.27\!\pm\!0.03\!\pm\!0.05$	36k	ABLIKIM	19⊤	BES	$J/\psi ightarrow \gamma \eta^{\prime}$
$5.43\!\pm\!0.23\!\pm\!0.09$	5.0k	¹ ABLIKIM	180	BES3	$\psi(2S) \rightarrow \pi^+ \pi^- \gamma \gamma \gamma$
$4.77\!\pm\!0.22\!\pm\!0.06$		² ABLIKIM	11	BES3	$J/\psi ightarrow \ \eta' \gamma$
$5.24\!\pm\!0.12\!\pm\!0.11$		PEDLAR	09	CLE3	$J/\psi ightarrow \ \eta' \gamma$
5.55 ± 0.44	35k	ABLIKIM	06E	BES2	$J/\psi ightarrow \ \eta' \gamma$
• • • We do not us	se the follo	owing data for average	ges, fit	s, limits	, etc. ● ● ●
$4.50\!\pm\!0.14\!\pm\!0.53$		BOLTON	92 B	MRK3	$J/\psi \rightarrow \gamma \pi^+ \pi^- \eta, \eta \rightarrow$
$4.30\!\pm\!0.31\!\pm\!0.71$		BOLTON	92 B	MRK3	$J/\psi \rightarrow \gamma \pi^+ \pi^- \eta, \eta \rightarrow \pi^+ \pi^- \pi^0$
$4.04\!\pm\!0.16\!\pm\!0.85$	622	AUGUSTIN	90	DM2	$J/\psi \rightarrow \gamma \eta \pi^+ \pi^-$
$4.39\!\pm\!0.09\!\pm\!0.66$	2420	AUGUSTIN	90	DM2	$J/\psi \rightarrow \gamma \gamma \pi^+ \pi^-$
$4.1 \ \pm 0.3 \ \pm 0.6$		BLOOM	83	CBAL	$e^+e^- ightarrow 3\gamma + $ hadrons
$2.9 \ \pm 1.1$	6	BRANDELIK	79C	DASP	$e^+e^- ightarrow 3\gamma$
$2.4 \hspace{0.1in} \pm 0.7$	57	BARTEL	76	CNTR	$e^+e^- ightarrow 2\gamma ho$

¹ ABLIKIM 180 reports $[\Gamma(J/\psi(1S) \rightarrow \gamma \eta'(958))/\Gamma_{total}] \times [B(\eta'(958) \rightarrow \gamma \gamma)] = (1.26 \pm 0.02 \pm 0.05) \times 10^{-4}$ from a measurement of $[\Gamma(J/\psi(1S) \rightarrow \gamma \eta'(958))/\Gamma_{total}] \times [B(\eta'(958) \rightarrow \gamma \gamma)] \times [B(\psi(2S) \rightarrow J/\psi(1S)\pi^+\pi^-)]$ assuming $B(\psi(2S) \rightarrow J/\psi(1S)\pi^+\pi^-) = (34.49 \pm 0.30) \times 10^{-2}$, which we rescale to our best values $B(\eta'(958) \rightarrow \gamma \gamma) = (2.307 \pm 0.033) \times 10^{-2}$, $B(\psi(2S) \rightarrow J/\psi(1S)\pi^+\pi^-) = (34.69 \pm 0.34) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.

² ABLIKIM 11 reports $(4.84 \pm 0.03 \pm 0.24) \times 10^{-3}$ from a measurement of $[\Gamma(J/\psi(15) \rightarrow \gamma \eta'(958))/\Gamma_{total}] / [B(\eta'(958) \rightarrow \pi^+ \pi^- \eta)] / [B(\eta \rightarrow 2\gamma)]$ assuming $B(\eta'(958) \rightarrow \pi^+ \pi^- \eta) = (43.2 \pm 0.7) \times 10^{-2}$, $B(\eta \rightarrow 2\gamma) = (39.31 \pm 0.20) \times 10^{-2}$, which we rescale to our best values $B(\eta'(958) \rightarrow \pi^+ \pi^- \eta) = (42.5 \pm 0.5) \times 10^{-2}$, $B(\eta \rightarrow 2\gamma) = (39.36 \pm 0.18) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.



$\Gamma(\gamma \rho \rho) / \Gamma_{\text{total}}$					Г ₂₆₅ /Г
VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT	
4.5 \pm 0.8 OUR	AVERAGE				
$4.7 \ \pm 0.3 \ \pm 0.9$		¹ BALTRUSAIT86	B MRK3	$J/\psi \rightarrow 4\pi\gamma$	
$3.75 \pm 1.05 \pm 1.20$)	² BURKE 82	MRK2	$2 J/\psi \rightarrow 4\pi\gamma$	
• • • We do not u	se the followin	g data for averages, fit	s, limits,	etc. • • •	
<0.09	90	³ BISELLO 89	В	$J/\psi ightarrow 4\pi\gamma$	
${1\over 2} {4\pi}$ mass less th ${2\over 2} {4\pi}$ mass less th ${3\over 4\pi}$ mass in the	an 2.0 GeV. an 2.0 GeV. V range 2.0–25	Ve have multiplied 2 $ ho^{m 0}$ GeV.	measure	ment by 3 to obtai	n 2 <i>p</i> .
$\Gamma(\gamma ho \omega) / \Gamma_{total}$					Г ₂₆₆ /Г
VALUE	<u>CL%</u>	DOCUMENT ID	TECN	COMMENT	
<5.4 × 10 ⁻⁴	90	ABLIKIM 08	A BES2	$e^+e^- \rightarrow J/\psi$	
$\Gamma(\gamma ho \phi) / \Gamma_{ m total}$					Г ₂₆₇ /Г
VALUE	<u>CL%</u>	DOCUMENT ID	TECN	COMMENT	
<8.8 × 10 ⁻⁵	90	ABLIKIM 08	A BES2	$e^+e^- \rightarrow J/\psi$	
$\Gamma(\gamma\omega\omega)/\Gamma_{ t total}$					Г ₂₆₈ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TECN	COMMENT	
1.61±0.33 OUR A	VERAGE				
$6.0 \ \pm 4.8 \ \pm 1.8$		ABLIKIM 08	A BES2	$J/\psi \rightarrow \gamma \omega \pi^+ \pi$.—
$1.41\!\pm\!0.2\ \pm0.42$	120 ± 17	BISELLO 87	SPEC	e^+e^- , hadrons γ	/
$1.76\!\pm\!0.09\!\pm\!0.45$		BALTRUSAIT85	c MRK3	$e^+e^- ightarrow$ hadro	$ns\gamma$
$\Gammaig(\gamma\phi\phiig)/\Gamma_{ extsf{total}}$					Г ₂₆₉ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID	TECN C	COMMENT	
4.0±1.2 OUR AVE	RAGE Error	includes scale factor o	f 2.1. See	e the ideogram bel	ow.
$7.5\!\pm\!0.6\!\pm\!1.2$	168	BAI 90B	MRK3 .	$J/\psi \rightarrow \gamma 4K$	0 0
$3.4 {\pm} 0.8 {\pm} 0.6$	33 ± 7	¹ BISELLO 90	DM2	$J/\psi \rightarrow \gamma K^+ K^-$	$K_S^0 K_L^0$
$3.1 \pm 0.7 \pm 0.4$		¹ BISELLO 86B	DM2	$J/\psi \rightarrow \gamma K^+ K^-$	$\kappa^+ \kappa^-$

 $1\,\phi\phi$ mass less than 2.9 GeV, $\eta_{\textit{C}}$ excluded.



$\Gamma(\gamma \eta (1405/1475) \rightarrow \gamma K \overline{K} \pi) / \Gamma_{\text{total}}$

VALUE (units 10^{-3}) DOCUMENT ID TECN COMMENT 2.8 \pm 0.6 OUR AVERAGE Error includes scale factor of 1.6. See the ideogram below. 1,2 BAI $J/\psi \rightarrow \gamma K^{\pm} K^0_{S} \pi^{\mp}$ 00D BES $1.66 \!\pm\! 0.1 \ \pm\! 0.58$ ³ AUGUSTIN 90 DM2 $J/\psi \rightarrow \gamma K \overline{K} \pi$ $3.8 \pm 0.3 \pm 0.6$ 82E CBAL $J/\psi \rightarrow K^+ K^- \pi^0 \gamma$ ³ EDWARDS $4.0 \pm 0.7 \pm 1.0$ ^{3,4} SCHARRE MRK2 e^+e^- 80 4.3 ± 1.7 • • • We do not use the following data for averages, fits, limits, etc. • • • ^{3,5,6} AUGUSTIN $1.78\!\pm\!0.21\!\pm\!0.33$ 92 DM2 $J/\psi \rightarrow \gamma K \overline{K} \pi$ $J/\psi \rightarrow \gamma K \overline{K} \pi$ 3,7,8 AUGUSTIN 92 DM2 $0.83\!\pm\!0.13\!\pm\!0.18$ $0.66\substack{+0.17}_{-0.16}\substack{+0.24\\-0.15}$ 3,6,9 BAI 90c MRK3 $J/\psi \rightarrow \gamma K^0_S K^{\pm} \pi^{\mp}$ $1.03 \substack{+0.21 + 0.26 \\ -0.18 - 0.19}$ 90c MRK3 $J/\psi \rightarrow \gamma K^0_S K^{\pm} \pi^{\mp}$ 3,8,10 BAI

¹ Interference with the $J/\psi(1S)$ radiative transition to the broad $K\overline{K}\pi$ pseudoscalar state around 1800 is $(0.15 \pm 0.01 \pm 0.05) \times 10^{-3}$.

² Interference with $J/\psi \rightarrow \gamma f_1(1420)$ is $(-0.03 \pm 0.01 \pm 0.01) \times 10^{-3}$.

³Includes unknown branching fraction $\eta(1405) \rightarrow K\overline{K}\pi$.

⁴ Corrected for spin-zero hypothesis for $\eta(1405)$.

⁵ From fit to the $a_0(980)\pi 0^{-+}$ partial wave.

 $^{6}a_{0}(980)\pi$ mode.

⁷ From fit to the $K^*(892)K = 0^{-+}$ partial wave.

 ${}^{8}K^{*}K$ mode.

⁹ From $a_0(980)\pi$ final state.

¹⁰ From $K^*(890) K$ final state.

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 Γ_{270}/Γ



$\Gamma(\gamma \eta (1405/1475) \rightarrow \gamma \gamma \rho^0) / \Gamma_{\text{total}}$

VALUE (units 10 ⁻⁴)	DOCUMENT ID		TECN	COMMENT
0.78±0.20 OUR AVERAGE	Error includes scale f	actor o	f 1.8.	
$1.07\!\pm\!0.17\!\pm\!0.11$	¹ BAI	04J	BES2	$J/\psi \rightarrow \gamma \gamma \pi^+ \pi^-$
$0.64\!\pm\!0.12\!\pm\!0.07$	¹ COFFMAN	90	MRK3	$J/\psi \rightarrow \gamma \gamma \pi^+ \pi^-$
1		0		

¹ Includes unknown branching fraction $\eta(1405) \rightarrow \gamma \rho^0$.

$\Gamma(\gamma\eta(1405/1475) \rightarrow \gamma\eta\pi^+\pi^-)/\Gamma_{\text{total}}$

$\Gamma(\gamma \eta (1405/1475) -$	$\rightarrow \gamma \eta \pi^+$	$(\pi^{-})/\Gamma_{total}$			Г ₂₇₂ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
3.0 \pm 0.5 OUR AVER	RAGE				
$2.6 \ \pm 0.7 \ \pm 0.4$		BAI	99	BES	$J/\psi \rightarrow \gamma \eta \pi^+ \pi^-$
$3.38\!\pm\!0.33\!\pm\!0.64$		¹ BOLTON	92 B	MRK3	$J/\psi \rightarrow \gamma \eta \pi^+ \pi^-$
\bullet \bullet \bullet We do not use t	he followi	ng data for average	s, fits,	limits, e	etc. ● ● ●
$7.0\ \pm 0.6\ \pm 1.1$	261	² AUGUSTIN	90	DM2	$J/\psi \rightarrow \gamma \eta \pi^+ \pi^-$
¹ Via $a_0(980) \pi$.					

² Includes unknown branching fraction to $\eta \pi^+ \pi^-$.

$\Gamma(\gamma \eta (1405/1475) \rightarrow \gamma \rho^0 \rho^0) / \Gamma_{\text{total}}$

VALUE (units 10 ⁻³)	DOCUMENT ID	TECN	COMMENT
1.7 \pm 0.4 OUR AVERAGE	Error includes scale factor	of 1.3.	
2.1 ± 0.4	BUGG 95	MRK3	$J/\psi \rightarrow \gamma \pi^+ \pi^- \pi^+ \pi^-$
1.36 ± 0.38	^{1,2} BISELLO 89B	DM2	$J/\psi \rightarrow 4\pi\gamma$

 $^1\,{\rm Estimated}$ by us from various fits.

² Includes unknown branching fraction to $\rho^0 \rho^0$.

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Γ₂₇₃/Γ

$\Gamma(\gamma\eta(1405/1475))$	$) ightarrow \gamma \gamma \phi ig) / \Gamma$	_ total				Г ₂₇₄ /Г
VALUE (units 10^{-6})	<u>CL%</u> EVTS	DOCUME	NT ID	TEC	N COMMEN	IT
<82	95	BAI	С)4J BES	52 $J/\psi \rightarrow$	$\gamma\gamma\kappa^+\kappa^-$
• • • We do not use	e the following	; data for avera	ges, fits,	limits, e	tc. • • •	
$7.03 \pm 0.92 \pm 0.91$ $10.36 \pm 1.51 \pm 1.54$. 1.3k I.9k	¹ ABLIKII ² ABLIKII	√ 1 √ 1	.81 BES .81 BES	$\begin{array}{ll} 53 & J/\psi \rightarrow \\ 53 & J/\psi \rightarrow \end{array}$	$\gamma \gamma \phi$ (1020) $\gamma \gamma \phi$ (1020)
1 Constructive inte	erference betwe	een the $X(1835)$	5) and $\eta($	1405) $/\eta$	(1475) is ass	umed in a fit
to the $\gamma \phi$ invaria ² Destructive inter to the $\gamma \phi$ invaria	ant mass. ference betwee ant mass.	en the $X(1835)$) and $\eta(1)$	1405)/ <i>η</i> (1475) is assı	umed in a fit
$\Gamma(\gamma\eta(1405) \rightarrow \gamma)$	$\gamma\gamma)/\Gamma_{total}$					Г ₂₇₅ /Г
VALUE	<u>CL%</u>	DOCUMENT	ID	TECN	COMMENT	
$<2.63 \times 10^{-0}$	90	ABLIKIM	180	BES3	$\psi(2S) \rightarrow \tau$	$\pi^+\pi^-\gamma\gamma\gamma$
$\Gamma(\gamma \eta (1475) \rightarrow \gamma)$	$\gamma\gamma)/\Gamma_{total}$					Г ₂₇₆ /Г
VALUE	<u>CL%</u>	DOCUMENT	ID	TECN	COMMENT	
<1.86 × 10 ⁻⁶	90	ABLIKIM	180	BES3	$\psi(2S) \rightarrow \tau$	$\pi^+\pi^-\gamma\gamma\gamma$
$\Gamma(\gamma \eta (1760) \rightarrow \gamma)$	$ ho^0 ho^0) / \Gamma_{ m tota}$	1				Г ₂₇₇ /Г
VALUE (units 10^{-3})		DOCUMENT	ID	TECN	COMMENT	
0.13±0.09	1	^{1,2} BISELLO	89 B	DM2	$J/\psi ightarrow 4\pi$	γ
¹ Estimated by us ² Includes unknow	from various f n branching fr	its. action to $ ho^{0} ho^{0}$				
$\Gamma(\gamma \eta (1760) \rightarrow \gamma \eta)$	$\omega \omega) / \Gamma_{total}$					Г ₂₇₈ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT	ID	TECN	COMMENT	
$1.98 {\pm} 0.08 {\pm} 0.32$	1045	ABLIKIM	06H	BES	$J/\psi \rightarrow \gamma \omega$	$r\omega$
$\Gamma(\gamma \eta (1760) \rightarrow \gamma)$	$\gamma\gamma)/\Gamma_{total}$					Г ₂₇₉ /Г
VALUE	<u>CL%</u>	DOCUMENT	ID	TECN	COMMENT	
$<4.80 \times 10^{-0}$	90	ABLIKIM	180	BES3	$\psi(2S) \rightarrow \tau$	$\pi^+\pi^-\gamma\gamma\gamma$
$\Gamma(\gamma \eta$ (2225))/ Γ_{tot}	tal					Г ₂₈₀ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID	<u> </u>	ECN CO	OMMENT	
3.14 $^{+0.50}_{-0.19}$ our av	ERAGE					
$2.40 {\pm} 0.10 {+} {2.47 \atop -0.18}$	1,2	ABLIKIM	16N B	ES3 $J_{/}$	$\psi \to \gamma K^+$	$\kappa^- \kappa^+ \kappa^-$
$4.4 \pm 0.4 \pm 0.8$	196 2	ABLIKIM	081 B	ES J/	$\psi \to \gamma K^+$	$K^{-}K_{S}^{0}K_{I}^{0}$
$3.3 \ \pm 0.8 \ \pm 0.5$	2	BAI	90b M	IRK3 $J_{/}$	$\psi \to \gamma K^+$	к-к+к-
$2.7 \pm 0.6 \pm 0.6$	2	BAI	90b M	IRK3 J	$\psi \to \gamma K^+$	$\kappa^- \kappa^0_S \kappa^0_L$
$2.4 \begin{array}{c} +1.5 \\ -1.0 \end{array}$	3,4	BISELLO	89B D	M2 J/	$\psi \rightarrow 4\pi\gamma$	-
1 From a partial w $\eta(2100), \ 0^{-+}$	/ave analysis c phase space, <i>f</i>	of $J/\psi \rightarrow \gamma \phi \phi$ $f_0(2100), f_2(20)$	ϕ that al 010), $f_{\mathcal{I}}(2)$	lso finds 2300), <i>f</i> -	significant si (2340), and	gnals for for a previously
unseen 0 $^{-+}$ sta	ate X(2500) ($M = 2470^{+15}$	+101 M	leV, Γ =	230 + 64 + 52	6 MeV).
² Includes unknow ³ Estimated by us ⁴ Includes unknow	n branching fr from various f n branching fr	action to $\phi\phi$. its. action to $ ho^0 ho^0$	- 23		- 35 - 3	· س

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$\Gamma(\gamma f_2(1270))/\Gamma$	total				Г ₂₈₁ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.63 ± 0.12 OUR A	VERAGE	Error includes sc	ale fa	ctor of 1	.3. See the ideogram below.
$2.07 \!\pm\! 0.16 \! \substack{+0.02 \\ -0.07}$	2.4k	1,2 DOBBS	15		$J/\psi ightarrow \gamma \pi \pi$
$1.63 \!\pm\! 0.26 \!+\! 0.02 \!-\! 0.05$		³ ABLIKIM	06V	BES2	$e^+e^- \rightarrow J/\psi \rightarrow \gamma \pi^+\pi^-$
$1.42\!\pm\!0.21\!+\!0.02\\-0.05$		⁴ ABLIKIM	06V	BES2	$e^+e^- \rightarrow J/\psi \rightarrow \gamma \pi^0 \pi^0$
$1.33\!\pm\!0.05\!\pm\!0.20$		⁵ AUGUSTIN	87	DM2	$J/\psi \rightarrow \gamma \pi^+ \pi^-$
$1.36\!\pm\!0.09\!\pm\!0.23$		⁵ BALTRUSAIT.	87	MRK3	$J/\psi \rightarrow \gamma \pi^+ \pi^-$
$1.48\!\pm\!0.25\!\pm\!0.30$	178	EDWARDS	8 2B	CBAL	$e^+e^- ightarrow 2\pi^0 \gamma$
$2.0 \hspace{0.1in} \pm 0.7$	35	ALEXANDER	78	PLUT	e^+e^-
$1.2 \ \pm 0.6$	30	⁶ BRANDELIK	78 B	DASP	$e^+e^- \rightarrow \pi^+\pi^-\gamma$

¹Using CLEO-c data but not authored by the CLEO Collaboration.

² DOBBS 15 reports $[\Gamma(J/\psi(1S) \rightarrow \gamma f_2(1270))/\Gamma_{total}] \times [B(f_2(1270) \rightarrow \pi\pi)] =$ (1.744 ± 0.052 ± 0.122) × 10⁻³ which we divide by our best value $B(f_2(1270) \rightarrow \pi\pi)$ = $(84.3^{+2.8}_{-1.0}) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. ³ ABLIKIM 06V reports $[\Gamma(J/\psi(1S) \rightarrow \gamma f_2(1270))/\Gamma_{total}] \times [B(f_2(1270) \rightarrow \pi\pi)] =$ (1.371 ± 0.010 ± 0.222) × 10⁻³ which we divide by our best value $B(f_2(1270) \rightarrow \pi\pi)$

 $= (84.3^{+2.8}_{-1.0}) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

⁴ABLIKIM 06V reports $[\Gamma(J/\psi(1S) \rightarrow \gamma f_2(1270))/\Gamma_{total}] \times [B(f_2(1270) \rightarrow \pi\pi)] =$ $(1.200 \pm 0.027 \pm 0.174) \times 10^{-3}$ which we divide by our best value B($f_2(1270) \rightarrow \pi\pi$) $=(84.3^{+2.8}_{-1.0}) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

⁵Estimated using B($f_2(1270) \rightarrow \pi\pi$)=0.843 \pm 0.012. The errors do not contain the uncertainty in the $f_2(1270)$ decay.

⁶Restated by us to take account of spread of E1, M2, E3 transitions.



$\Gamma(\gamma f_0(1370) \rightarrow \gamma \pi \gamma)$	r)/Γ _{total}	Г ₂₈₄ /Г
VALUE (units 10 ⁻⁵)	DOCUMENT ID TECN C	OMMENT
• • • We do not use th	e following data for averages, fi	ts, limits, etc. ● ● ●
$38\!\pm\!10$	SARANTSEV 21 RVUE J	$/\psi(1S) ightarrow \gamma(\pi\pi, \ K\overline{K}, \ \eta\eta, \ \omega\phi)$
$\Gamma(\gamma f_0(1370) \rightarrow \gamma K)$	κ)/Γ _{total}	Г ₂₈₅ /Г
VALUE (units 10 ⁻⁴)	EVTS DOCUMENT ID	TECN COMMENT
4.19±0.73±1.34	478 ¹ DOBBS 15	$\overline{J/\psi} \rightarrow \gamma K \overline{K}$
$\bullet \bullet \bullet$ We do not use the	e following data for averages, fi	ts, limits, etc. ● ● ●
1.3 ±0.4	SARANTSEV 21	L RVUE $J/\psi(1S) ightarrow \gamma (\pi \pi, K\overline{K}, \eta \eta, \omega \phi)$
1 Using CLEO-c data	but not authored by the CLEO	Collaboration.
$\Gamma(\gamma f_0(1370) \rightarrow \gamma K)$	$\int_{S} K_{S}^{0} / \Gamma_{\text{total}}$	Г ₂₈₆ /Г
VALUE (units 10^{-5})	DOCUMENT ID	TECN COMMENT
$1.07^{+0.08}_{-0.07}{}^{+0.36}_{-0.34}$	ABLIKIM 18	BAA BES3 $J/\psi \rightarrow \gamma K^0_S K^0_S$
$\Gamma(\gamma f_0(1370) \rightarrow \gamma \eta r)$)/F _{total}	Г ₂₈₇ /Г
VALUE (units 10^{-5})	DOCUMENT ID TECN C	OMMENT
$\bullet \bullet \bullet$ We do not use the	e following data for averages, fi	ts, limits, etc. ● ● ●
3.5 ± 1.0	SARANTSEV 21 RVUE J	$/\psi(1S) \rightarrow \gamma(\pi\pi, \ K\overline{K}, \ \eta\eta, \ \omega\phi)$
$\Gamma(\gamma f_0(1370) \rightarrow \gamma \eta r)$	γ')/Γ _{total}	Г ₂₈₈ /Г
VALUE (units 10 ⁻⁵)	DOCUMENT ID TECN C	OMMENT
$\bullet \bullet \bullet$ We do not use the	e following data for averages, fi	ts, limits, etc. ● ● ●
$0.9 {\pm} 0.3$	SARANTSEV 21 RVUE J	$/\psi(1S) ightarrow \gamma(\pi\pi, \ {\cal K} \overline{{\cal K}}, \ \eta\eta, \ \omega\phi)$
$\Gamma(\gamma f_1(1420) \rightarrow \gamma K)$	$\overline{K}\pi)/\Gamma_{ m total}$	Г ₂₈₉ /Г
VALUE (units 10^{-3})	DOCUMENT ID	TECN COMMENT
0.79±0.13 OUR AVER	AGE	
$0.68 \pm 0.04 \pm 0.24$	BAI OC	DD BES $J/\psi \rightarrow \gamma K \pm K_S^0 \pi^+$
$0.76 \pm 0.15 \pm 0.21$	^{1,2} AUGUSTIN 92	$2 DM2 J/\psi \to \gamma K K \pi$
$0.87 \pm 0.14 \substack{+0.14 \\ -0.11}$	^I BAI 90	DC MRK3 $J/\psi \rightarrow \gamma \kappa^0_S \kappa^\pm \pi^\mp$
¹ Included unknown b ² From fit to the K^* (ranching fraction $f_1(1420) ightarrow K$ 892) K 1 $^++$ partial wave.	$K\overline{K}\pi.$
$\Gamma(\gamma f_0(1500) \rightarrow \gamma \pi \gamma)$	r)/Γ _{total}	Г ₂₉₀ /Г
VALUE (units 10^{-4}) EV7	S DOCUMENT ID T	ECN COMMENT
1.09±0.24 OUR AVER	AGE	
$1.21 \pm 0.29 \pm 0.24$ 17	4 ^I DOBBS 15	$J/\psi ightarrow \gamma \pi \pi$
$1.00\!\pm\!0.03\!\pm\!0.45$	² ABLIKIM 06V B	ES2 $e^+e^- \rightarrow J/\psi \rightarrow \gamma \pi^+\pi^-$
$1.02 \pm 0.09 \pm 0.45$	² ABLIKIM 06V B	$ES2 e^+ e^- \to \ J/\psi \to \ \gamma \pi^0 \pi^0$
• • • We do not use th	e following data for averages, fi	ts, limits, etc. ● ● ●
0.90 ± 0.17	SARANTSEV 21 R	$\begin{array}{rcl} \text{VUE} & J/\psi(1S) \rightarrow & \gamma \; (\pi \pi, \; K \overline{K}, \\ & \eta \eta, \; \omega \phi) \end{array}$
5.7 ±0.8	^{3,4} BUGG 95 M	IRK3 $J/\psi \rightarrow \gamma \pi^+ \pi^- \pi^+ \pi^-$
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¹ Using CLEO-c data but not authored by the CLEO Collaboration. ² Including unknown branching fraction to $\pi\pi$. ³ Including unknown branching ratio for $f_0(1500) \rightarrow \pi^+\pi^-\pi^+\pi^-$. ⁴ Assuming that $f_0(1500)$ decays only to two *S*-wave dipions.

$\Gamma(\gamma f_0(1500) \to \gamma \eta)$	$\eta \eta \big) / \Gamma_{\text{total}}$					Г ₂₉₁ /Г
VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT	
$1.65^{+0.26+0.51}_{-0.31-1.40}$	5.5k	¹ ABLIKIM	13N	BES3	$J/\psi \rightarrow \gamma \eta \eta$	1
• • • We do not use	the following	data for averages	s, fits,	limits, «	etc. • • •	
1.1 ± 0.4		SARANTSEV	21	RVUE	$J/\psi(1S) ightarrow K\overline{K}, \ \eta \eta_s$	$\gamma \ (\pi \pi, \omega \phi)$
¹ From partial wave resonances.	analysis incl	uding all possible	comb	inations	of 0 ⁺⁺ , 2 ⁺⁺	⁻ , and 4 ⁺⁺
$\Gamma(\gamma f_0(1500) \rightarrow \gamma h)$	$K_S^0 K_S^0) / \Gamma_t$	otal				Г ₂₉₂ /Г
VALUE (units 10^{-5})		DOCUMENT ID		TECN	COMMENT	
$1.59 {\pm} 0.16 {+} 0.18 {-} 0.56$		ABLIKIM	18AA	BES3	$J/\psi ightarrow \gamma K$	⁰ κ ⁰ 5
• • • We do not use	the following	data for averages	s, fits,	limits, e	etc. • • •	
0.7 ±0.3		SARANTSEV	21	RVUE	$J/\psi(1S) ightarrow K\overline{K}, \ \eta\eta_s$	$\gamma (\pi \pi, \omega \phi)$
$\Gamma(\gamma f_0(1500) \rightarrow \gamma \eta)$	$\eta \eta') / \Gamma_{\text{total}}$		601			Г ₂₉₃ /Г
VALUE (units 10 °)	DOCUMENT	<u>ID</u> <u>IECN</u>	<u>COM</u>	IMEN I		
• • • we do not use		, data for average	s, fits,	limits, e	etc. • • •	
$18.1 \pm 1.1 + 1.9 - 1.3$	¹ ABLIKIM	22AS BES3	J/ψ	$(1S) \rightarrow$	$\gamma \eta \eta^\prime$	
12 ± 5	SARANTS	SEV 21 RVUE	J/ψ	$(1S) \rightarrow$	$\gamma(\pi\pi, K\overline{K})$	$\eta\eta, \omega\phi$)
¹ From a Breit-Wigr <i>P</i> -wave.	ner fit involvi	ng 9 resonances a	nd a re	esonatin	g exotic $\eta_1(18)$	$855) \rightarrow \eta \eta'$
$\Gamma(\gamma f_1(1510) \rightarrow \gamma r_1)$	η ^{π+} π ⁻)/Γ	total				Г ₂₉₄ /Г
VALUE (units 10^{-4})		DOCUMENT ID		TECN	COMMENT	
4.5±1.0±0.7		BAI	99	BES	$J/\psi \rightarrow \gamma \eta \gamma$	$\pi^+\pi^-$
$\Gamma(\gamma f'_2(1525))/\Gamma_{tot}$	tal					Г ₂₉₅ /Г
VALUE (units 10^{-4})	CL% EVTS	DOCUMENT	ID	TECI	COMMENT	
5.7 $+0.8 - 0.5$ OUR A	/ERAGE E	rror includes scale	facto	r of 1.5.	See the ideo	gram
below.		12				
$8.0 \pm 0.9 \pm 0.2$	750	^{1,2} DOBBS	15	5	$J/\psi \rightarrow \gamma$	KK
$3.85 \pm 0.17 + 1.91 - 0.73$		³ BAI	03	BG BES	$J/\psi ightarrow \gamma$	KK
$3.6\ \pm 0.4\ +1.4\ -0.4$		³ BAI	96	6c BES	$J/\psi ightarrow \gamma$	$\kappa^+ \kappa^-$
$5.6 \pm 1.4 \pm 0.9$		³ AUGUSTIN	88	B DM	2 $J/\psi \rightarrow \gamma$	K^+K^-
$4.5 \ \pm 0.4 \ \pm 0.9$		³ AUGUSTIN	88	B DM	2 $J/\psi \rightarrow \gamma$	$K^{0}K^{0}$
					/ /	$^{\prime\prime}S^{\prime\prime}S$
$6.8 \ \pm 1.6 \ \pm 1.4$		³ BALTRUSA	IT87	7 MRI	$\sqrt{3} J/\psi \rightarrow \gamma$	$K^+ K^-$

<3.4	90	4	⁴ BRANDELIK	79C	DASP	$e^+e^- \rightarrow$	$\pi^+\pi^-\gamma$
<2.3	90	3	ALEXANDER	78	PLUT	$e^+ e^- \rightarrow$	$K^+K^-\gamma$
1 Using CLEO	-c data but r	not auth	pored by the CLEO	Colla	horation		

¹ Using CLEO-c data but not authored by the CLEO Collaboration. ² DOBBS 15 reports $[\Gamma(J/\psi(1S) \rightarrow \gamma f'_2(1525))/\Gamma_{total}] \times [B(f'_2(1525) \rightarrow K\overline{K})] = (7.09 \pm 0.46 \pm 0.67) \times 10^{-4}$ which we divide by our best value $B(f'_2(1525) \rightarrow K\overline{K}) = (88.8 \pm 2.2) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value. ³ Using $B(f'_2(1525) \rightarrow K\overline{K}) = 0.888$.

⁴Assuming isotropic production and decay of the $f'_2(1525)$ and isospin.



$\Gamma(\gamma f'_2(1525))$	$ ightarrow \gamma \eta \eta) / \Gamma_{total}$				Г ₂₉₇ /Г
VALUE (units 10^{-5})	EVTS	DOCUMENT ID	TECI	<u>сом</u>	MENT
$3.42^{+0.43+1.3}_{-0.51-1.3}$	7 5.5k	¹ ABLIKIM	13N BES	3 J/ψ	$\rightarrow \gamma \eta \eta$
¹ From partial resonances.	wave analysis inc	uding all possible	combinatio	ons of 0^+	+, 2 ⁺⁺ , and 4 ⁺⁺
Γ(γ f ₂ (1640) -	$\rightarrow \gamma \omega \omega) / \Gamma_{total}$				Г ₂₉₉ /Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID	TECI	<u>COMI</u>	MENT
$0.28 \pm 0.05 \pm 0.1$	7 141	ABLIKIM	06н BES	J/ψ	$\rightarrow \gamma \omega \omega$
Γ(γ f ₀ (1710) -	$\rightarrow \gamma \pi \pi) / \Gamma_{\text{total}}$				Г ₃₀₀ /Г
VALUE (units 10^{-4})	<u>EVTS</u> <u>D</u>	OCUMENT ID	TECN C	COMMENT	
3.8 ± 0.5 OUR		0000			
$3.72 \pm 0.30 \pm 0.43$	3 483 ⁺ D	OBBS 15	J	$\psi/\psi \rightarrow \gamma + - \gamma$	$\pi \pi + -$
$3.90 \pm 0.00 \pm 1.1$	2 - A 1 2 A	BLIKIM 06V	BES2 e	$e \rightarrow + 2^{-}$	$J/\psi \rightarrow \gamma \pi^+ \pi$
$\bullet \bullet \bullet We do no$	t use the following	data for averages	fits limit	s.etc.●	$J/\psi \rightarrow \gamma \pi^{-} \pi^{-}$
0.6 ±0.2	³ S,	ARANTSEV 21	RVUE J	$1/\psi(1S)$	$\rightarrow \gamma (\pi \pi, \ K \overline{K},$
$2.5 \pm 1.6 \pm 0.8$	В	АІ 98н	BES J	$\eta \eta, \omega$ $1/\psi \rightarrow \gamma$	$(\pi^0)_{\pi^0}$
¹ Using CLEO ² Including un ³ There is a fu	-c data but not at known branching f irther (2.4 \pm 0.8)	thored by the CLE fraction to $\pi\pi$. $ imes 10^{-4}$ scalar con	EO Collabo tribution a	ration. t 1765 N	leV.
Γ(γ f ₀ (1710) -	$\rightarrow \gamma K \overline{K}) / \Gamma_{\text{tota}}$	I			Г ₃₀₁ /Г
VALUE (units 10^{-4})	CL% EVT	DOCUMEN	T ID	TECN	COMMENT
9.5 + 1.0	OUR AVERAGE	Error includes so	ale factor	of 1.5. S	ee the ideogram
below.					
8.00^{+} 0.12	+1.24	¹ ABLIKIM	18A/	A BES3	$J/\psi \rightarrow \gamma K^0_{\mathcal{L}} K^0_{\mathcal{L}}$
11.76 ± 0.54	± 0.40	k ² DOBBS	15		$J/\psi \rightarrow \gamma K \overline{K}$
9.62±029	$^{+3.51}_{-1.86}$	³ BAI	03 G	BES	$J/\psi \rightarrow \gamma K \overline{K}$
5.0 ± 0.8	+1.8	^{1,4} BAI	96 C	BES	$J/\psi \rightarrow \gamma K^+ K^-$
92 + 14	-0.4 +1.4	¹ AUGUST	IN 88	DM2	$I/\eta \rightarrow \gamma K^+ K^-$
10.4 + 1.2	+1.6	¹ AUGUST	IN 88	DM2	$J/\psi \rightarrow \gamma K^0 K^0$
9.6 + 1.2	+1.8	¹ BALTRUS	SAIT. 87	MRK3	$1/\psi \rightarrow \gamma K^+ K^-$
• • • We do no	t use the following	data for averages	, fits, limit	s, etc. •	••
2.3 ± 0.8		⁵ SARANT	SEV 21	RVUE	$J/\psi(1S) \to \gamma$ $(\pi\pi, \ K\overline{K},$
$1.6~\pm~0.2$	$+0.6 \\ -0.2$	1,6 _{BAI}	96 C	BES	$J/\psi \rightarrow \gamma K^+ K^-$
< 0.8	90	⁷ BISELLO	89 B		$J/\psi \rightarrow 4\pi\gamma$
$1.6~\pm~0.4$	± 0.3	⁸ BALTRUS	SAIT87	MRK3	$J/\psi \rightarrow \gamma \pi^+ \pi^-$
3.8 ± 1.6		⁹ EDWARD	S 82D	CBAL	$e^+e^- \rightarrow \eta\eta\gamma$

- ¹ Includes unknown branching fraction to K^+K^- or $K^0_S K^0_S$. We have multiplied K^+K^- measurement by 2, and $K^0_S K^0_S$ by 4 to obtain $K\overline{K}$ result.
- $^2\,\text{Using CLEO-c}$ data but not authored by the CLEO Collaboration.
- ³Includes unknown branching ratio to K^+K^- or $K^0_{\varsigma}K^0_{\varsigma}$.
- ⁴Assuming $J^P = 2^+$ for $f_0(1710)$.

⁵ There is a further $(6 \pm 2) \times 10^{-4}$ scalar contribution at 1765 MeV.

- ⁶Assuming $J^P = 0^+$ for $f_0(1710)$.
- ⁷ Includes unknown branching fraction to $\rho^0 \rho^0$.
- ⁸ Includes unknown branching fraction to $\pi^+\pi^-$.

⁹ Includes unknown branching fraction to $\eta\eta$.



$\Gamma(\gamma f_0(1710) \rightarrow \gamma \eta)$	$\eta')/\Gamma_{total}$				Г ₃₀₄ /Г
VALUE (units 10^{-5})	DOCUMENT I	D TECN	СОМ	MENT	
$\bullet \bullet \bullet$ We do not use t	he following c	lata for averages	, fits,	limits, e	etc. • • •
6.5 ± 2.5	¹ SARANTSE	V 21 RVUE	J/ψ	(1S) ightarrow	$\gamma(\pi\pi, K\overline{K}, \eta\eta, \omega\phi)$
1 There is a further	$(2.5\pm1.1) imes$	10 ⁻⁵ scalar con	tribut	ion at 1	765 MeV.
$\Gamma(\gamma f_0(1710) \rightarrow \gamma \omega)$	$\phi \phi \big) / \Gamma_{total}$				Г ₃₀₅ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
2.5 \pm 0.6 OUR AVER	KAGE				
$2.00\pm0.08+1.00$	1.3k	ABLIKIM	13J	BES3	$J/\psi \rightarrow \gamma \omega \phi$
$2.61 \pm 0.27 \pm 0.65$	95	ABLIKIM	06J	BES2	$J/\psi \rightarrow \gamma \omega \phi$
• • • We do not use t	the following c	lata for averages	, fits,	limits, e	etc. ● ● ●
0.1 ± 0.1	L	^L SARANTSEV	21	RVUE	$egin{array}{ll} J/\psi(1S) ightarrow \gamma \; (\pi\pi, \ K \overline{K}, \; \eta \eta, \; \omega \phi) \end{array}$
1 There is a further	(2.2 \pm 0.4) $ imes$	10^{-4} scalar con	tribut	ion at 1	765 MeV.
$\Gamma(\gamma f_0(1770) \rightarrow \gamma k)$	$({}^0_{\rm S} K^0_{\rm S}) / \Gamma_{\rm tot}$	al			Г ₃₀₆ /Г
VALUE (units 10^{-5})	J J , tet	DOCUMENT ID		TECN	COMMENT
$1.11 {\pm} 0.06 {+} 0.19 {-} 0.32$		ABLIKIM	18AA	BES3	$J/\psi ightarrow \gamma K^0_S K^0_S$
$\Gamma(\gamma f_0(1770) \rightarrow \gamma \eta)$	$\eta')/\Gamma_{total}$				Г ₃₀₉ /Г
VALUE (units 10^{-5})		DOCUMENT ID		TECN	COMMENT
• • • We do not use t	he following c	lata for averages	, fits,	limits, e	etc. • • •
$0.11\!\pm\!0.01\!+\!0.04\\-\!0.03$	1	^L ABLIKIM	22AS	BES3	$J/\psi(1S) ightarrow \gamma \eta \eta^{\prime}$
¹ From a Breit-Wign <i>P</i> -wave.	er fit involving	g 9 resonances ar	nd a re	esonating	g exotic $\eta_1(1855) o \eta \eta'$
$\Gamma(\gamma f_2(1810) \rightarrow \gamma \eta)$	$\eta)/\Gamma_{total}$				Г ₃₀₇ /Г
VALUE (units 10^{-5})	EVTS	DOCUMENT ID		COMME	NT
$5.40^{+0.60}_{-0.67}^{+3.42}_{-2.35}$	5.5k ¹	^L ABLIKIM	13N	$J/\psi ightarrow$	$\gamma \eta \eta$
¹ From partial wave resonances.	analysis incluc	ling all possible	combi	nations	of 0 ⁺⁺ , 2 ⁺⁺ , and 4 ⁺⁺
$\Gamma(\gamma \eta_1(1855) \rightarrow \gamma \eta_2)$	$\eta \eta') / \Gamma_{total}$				Г ₃₀₈ /Г
VALUE (units 10^{-6})		DOCUMENT ID		TECN	COMMENT
$2.70 \pm 0.41 \substack{+0.16 \\ -0.35}$	1	^L ABLIKIM	22AI	BES3	$J/\psi(1S) ightarrow \gamma \eta \eta^\prime$
1 From a Breit-Wigr $\eta\eta^\prime$ <i>P</i> -wave. For a	ner fit involvin nalysis details	g 9 resonances see ABLIKIM 22	and tl 2AS.	he reson	ating exotic $\eta_1(1855) ightarrow$
$\Gamma(\gamma f_2(1910) \rightarrow \gamma u)$	$\omega)/\Gamma_{\rm total}$				Г310/Г
VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
0.20±0.04±0.13	151	ABLIKIM	06н	BES	$J/\psi ightarrow \gamma \omega \omega$

 $\Gamma(\gamma f_2(1950) \rightarrow \gamma K^*(892) \overline{K}^*(892)) / \Gamma_{\text{total}}$ Γ_{311}/Γ VALUE (units 10^{-3}) DOCUMENT ID TECN COMMENT $J/\psi \rightarrow \gamma K^+ K^0 \pi^+ \pi^ 0.7 \pm 0.1 \pm 0.2$ 00B BES BAI $\Gamma(\gamma f_2(2010) \rightarrow \gamma \eta \eta') / \Gamma_{\text{total}}$ Γ_{312}/Γ VALUE (units 10^{-5}) DOCUMENT ID TECN COMMENT • • • We do not use the following data for averages, fits, limits, etc. • • • $0.71 \pm 0.06 \substack{+0.10 \\ -0.06}$ ¹ ABLIKIM 22AS BES3 $J/\psi(1S) \rightarrow \gamma \eta \eta'$ ¹ From a Breit-Wigner fit involving 9 resonances and a resonating exotic $\eta_1(1855) \rightarrow \eta \eta'$ P-wave. $\Gamma(\gamma f_0(2020) \rightarrow \gamma \pi \pi) / \Gamma_{\text{total}}$ Γ_{313}/Γ VALUE (units 10^{-5}) DOCUMENT ID TECN COMMENT • • • We do not use the following data for averages, fits, limits, etc. • • • 42 ± 10 SARANTSEV 21 RVUE $J/\psi(1S) \rightarrow \gamma(\pi \pi, K \overline{K}, \eta \eta, \omega \phi)$ $\Gamma(\gamma f_0(2020) \rightarrow \gamma K \overline{K}) / \Gamma_{\text{total}}$ Γ_{314}/Γ VALUE (units 10^{-5}) DOCUMENT ID TECN COMMENT • • • We do not use the following data for averages, fits, limits, etc. • • • SARANTSEV 21 RVUE $J/\psi(1S) \rightarrow \gamma(\pi \pi, K\overline{K}, \eta \eta, \omega \phi)$ 55 ± 25 $\Gamma(\gamma f_0(2020) \rightarrow \gamma \eta \eta) / \Gamma_{\text{total}}$ Γ_{315}/Γ VALUE (units 10^{-5}) DOCUMENT ID TECN COMMENT • • We do not use the following data for averages, fits, limits, etc. • • • SARANTSEV 21 RVUE $J/\psi(1S) \rightarrow \gamma(\pi \pi, K\overline{K}, \eta \eta, \omega \phi)$ 10 ± 10 $\Gamma(\gamma f_0(2020) \rightarrow \gamma \eta' \eta') / \Gamma_{\text{total}}$ Γ_{316}/Γ VALUE (units 10^{-4}) DOCUMENT ID TECN COMMENT $2.63 \pm 0.06 \substack{+0.31 \\ -0.46}$ 22C BES3 $J/\psi \rightarrow \gamma \eta' \eta' \rightarrow 4/5 \gamma 2(\pi^+ \pi^-)$ ¹ ABLIKIM ¹ From a partial wave analysis of the systems (γX) , with $X \to \eta' \eta'$, and $(\eta' X)$, with $X
ightarrow \gamma \eta'$ in the decay $J/\psi
ightarrow \gamma \eta' \eta'$. The intermediate resonance X is parametrized by a constant-width, relativistic Breit-Wigner. $\Gamma(\gamma f_0(2020) \rightarrow \gamma \eta \eta') / \Gamma_{\text{total}}$ Γ_{317}/Γ VALUE (units 10^{-5}) DOCUMENT ID TECN COMMENT • • • We do not use the following data for averages, fits, limits, etc. • $2.28 {\pm} 0.12 {+} {0.29 \atop -0.20}$ ¹ ABLIKIM 22AS BES3 $J/\psi(1S) \rightarrow \gamma \eta \eta'$ ¹ From a Breit-Wigner fit involving 9 resonances and a resonating exotic $\eta_1(1855) o \eta \eta'$ P-wave. $\Gamma(\gamma f_4(2050))/\Gamma_{total}$ Γ_{318}/Γ VALUE (units 10^{-3}) TECN COMMENT ¹ BALTRUSAIT...87 $2.7 \pm 0.5 \pm 0.5$ MRK3 $J/\psi \rightarrow \gamma \pi^+ \pi^-$ ¹Assuming branching fraction $f_4(2050) \rightarrow \pi \pi / \text{ total} = 0.167$.

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$(\gamma t_4(2050) \rightarrow \gamma)$	ηη΄)/I _{tota}	I				I 319/I
VALUE (units 10 ⁻⁵)	<u> </u>	DOCUMENT IL)	TECN	COMMENT	
• • • We do not use	the followin	g data for averag	es, fits,	limits,	etc. ● ● ●	
$0.06 {\pm} 0.01 {+} 0.03 {-} 0.01$		¹ ABLIKIM	22AS	BES3	$J/\psi(1S) ightarrow$	$\gamma \eta \eta \prime$
¹ From a Breit-Wig <i>P</i> -wave.	ner fit involv	ving 9 resonances	and a re	esonatin	g exotic $\eta_1(18)$	55) $\rightarrow \eta \eta'$
$\Gamma(\gamma f_0(2100) \rightarrow \gamma)$	$\eta \eta) / \Gamma_{total}$					Г ₃₂₀ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT IL)	TECN	COMMENT	
$1.13 \substack{+0.09 + 0.64 \\ -0.10 - 0.28}$	5.5k	¹ ABLIKIM	13N	BES3	$J/\psi \rightarrow \gamma \eta \eta$	1
• • • We do not use	the followin	g data for averag	es, fits,	limits,	etc. ● ● ●	
1.8 ±1.5		SARANTSE	/ 21	RVUE	$J/\psi(1S) \rightarrow K\overline{K}, \ \eta\eta,$	$\gamma (\pi \pi, \omega \phi)$
¹ From partial wave resonances.	e analysis inc	cluding all possibl	e combi	nations	of 0 ⁺⁺ , 2 ⁺⁺	, and 4 ⁺⁺
$\Gamma(\gamma f_0(2100) \rightarrow \gamma)$	$(\pi \pi) / \Gamma_{total}$					Г ₃₂₂ /Г
VALUE (units 10^{-4})	EVTS	DOCUMENT IL)	TECN	COMMENT	
6.24±0.48±0.87	744	¹ DOBBS	15		$J/\psi \rightarrow \gamma \pi \tau$	τ
• • • We do not use	the followin	g data for averag	es, fits,	limits,	etc. ● ● ●	
2.0 ±0.8		SARANTSE	/ 21	RVUE	$J/\psi(1S) ightarrow K\overline{K}, \ \eta\eta,$	$\gamma (\pi \pi, \omega \phi)$
¹ Using CLEO-c da	ta but not a	uthored by the C	LEO Co	llaborat	tion.	
$\Gamma(\gamma f_0(2100) \rightarrow \gamma)$	<u>K</u>)/[-1				Г <u>ээ</u> 1 /Г
$VAI UF$ (units 10^{-5})	DOCUMEN	ai It id tecn	і сом	MENT		- 321/ -
• • • We do not use	the followin	g data for averag	es. fits.	limits.	etc. ● ● ●	
32±20	SARANT	SEV 21 RVU	E J/ψ	(1S) ightarrow	$\gamma(\pi\pi, K\overline{K})$	$\eta\eta, \omega\phi$)
$\Gamma(\gamma f_0(2200))/\Gamma_{tot}$	tal					Г ₃₂₃ /Г
VALUE (units 10 ⁻⁴)		DOCUMENT IL)	TECN	COMMENT	
• • • We do not use	the followin	g data for averag	es, fits,	limits,	etc. • • •	
1.5		¹ AUGUSTIN	88	DM2	$J/\psi \rightarrow \gamma \kappa_{0}^{0}$	$\frac{1}{2}\kappa_{s}^{0}$
¹ Includes unknown	branching f	raction to $K_S^0 K_S^0$) 5·			
$\Gamma(\gamma f_0(2200) \rightarrow \gamma)$	$(\pi \pi)/\Gamma_{total}$	l				Г ₃₂₆ /Г
V/1/1E (unite 10-5)	DOCUMEN		I COM	MENT		

 \bullet \bullet \bullet We do not use the following data for averages, fits, limits, etc. \bullet \bullet SARANTSEV 21 RVUE $J/\psi(1S) \rightarrow \gamma(\pi \pi, \ K \overline{K}, \ \eta \eta, \ \omega \phi)$ 5 ± 2

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$\Gamma(\gamma f_0(2200) \rightarrow \gamma)$	γ <i>ΚҠ</i>)/Γ _t	otal				Г ₃₂₄ /Г
VALUE (units 10^{-4})	EVTS	Ľ	OCUMENT IL)	TECN	COMMENT
$5.86 {\pm} 0.49 {\pm} 1.20$	490	¹ C	OBBS	15		$J/\psi \rightarrow \gamma K \overline{K}$
• • • We do not us	e the follov	ving dat	a for averag	es, fits,	limits, e	etc. ● ● ●
$0.5 \hspace{0.1 cm} \pm 0.5$		S	ARANTSE\	/ 21	RVUE	$J/\psi(1S) ightarrow \gamma \; (\pi \pi, \ K \overline{K}, \; \eta \eta, \; \omega \phi)$
1 Using CLEO-c d	ata but no	t authoi	red by the C	LEO Co	llaborati	ion.
$\Gamma(\gamma f_0(2200) \rightarrow \gamma)$	$(K_S^0 K_S^0)$	/Γ _{total}				Г ₃₂₅ /Г
VALUE (units 10^{-4})		Ľ	OCUMENT IL)	TECN	COMMENT
$2.72^{+0.08}_{-0.06}^{+0.17}_{-0.47}$		A	BLIKIM	18AA	BES3	$J/\psi \rightarrow \gamma \kappa^0_S \kappa^0_S$
$\Gamma(\gamma f_0(2200) \to \gamma$	$(\eta \eta) / \Gamma_{tor}$	tal				Г ₃₂₇ /Г
VALUE (units 10^{-5})	DOCUM	ENT ID	TECN	<u> </u>	MENT	
• • • We do not us	e the follov	ving dat	a for averag	es, fits,	limits, e	etc. ● ● ●
0.7 ± 0.4	SARA	ITSEV	21 RVU	E J/ψ	(1S) ightarrow	$\gamma(\pi\pi, K\overline{K}, \eta\eta, \omega\phi)$
$\Gamma(\gamma f_J(2220))/\Gamma_t$	otal					Г ₃₂₈ /Г
VALUE (units 10^{-5})	CL% EVT	<u>s</u>	DOCUMENT	ID	TECN	COMMENT
• • • We do not us	e the follov	ving dat	a for averag	es, fits,	limits, e	etc. • • •
>300		1	BAI	96	B BES	$e^+e^- ightarrow ~\gamma \overline{p} p$, $K \overline{K}$
>250	99.9	2	HASAN	96	SPEC	$\Sigma \overline{p}p \rightarrow \pi^+\pi^-$
< 2.3	95	3	AUGUSTIN	88 1	DM2	$J/\psi \rightarrow \gamma K^+ K^-$
< 1.6	95	3	AUGUSTIN	88 1	DM2	$J/\psi ightarrow \ \gamma K^0_S K^0_S$
$12.4^{+6.4}_{-5.2}{\pm}2.8$	2	3 3	BALTRUSA	AIT861	D MRK	3 $J/\psi \rightarrow \gamma \kappa^0_S \kappa^0_S$
$8.4^{+3.4}_{-2.8}{\pm}1.6$	9	3 3	BALTRUSA	AIT861	D MRK	3 $J/\psi \rightarrow \gamma K^+ K^-$
¹ Using BARNES ² Using BAI 96B. ³ Includes unknow	93. 'n branchin	g fractio	on to K^+K	$^{-}$ or K_{2}^{0}	ς κ ⁰ .	

 $\Gamma(\gamma f_J(2220) \rightarrow \gamma \pi \pi) / \Gamma_{\text{total}}$

Γ₃₂₉/Γ

VALUE (units 10^{-5})	CL%	DOCUMENT I	D	TECN	COMMENT
< 3.9	90	^{1,2} DOBBS	15		$J/\psi ightarrow \gamma \pi \pi$
• • • We do not u	se the f	ollowing data for a	averages,	fits, lin	nits, etc. • • •
14 ± 8 ± 4		BAI	98н	BES	$J/\psi \rightarrow \gamma \pi^0 \pi^0$
$8.4\!\pm\!2.6\!\pm\!3.0$		BAI	96 B	BES	$e^+e^- \rightarrow J/\psi \rightarrow \gamma \pi^+\pi^-$
¹ Using CLEO-c o	data bu	t not authored by	the CLE	O Colla	boration.

² For $\Gamma = 20/50$ MeV, the 90% CL upper limits for $\pi^+\pi^-$ and $\pi^0\pi^0$ are $2.6/5.2 \times 10^{-5}$ and $1.3/1.9 \times 10^{-5}$, respectively.

$\Gamma(\gamma f_J(2220) \rightarrow$	$\gamma K \overline{K}) / \Gamma_{t}$	otal			Гз	₃₃₀ /Г
VALUE (units 10^{-5})	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT	
< 4.1	90 1,2	DOBBS	15		$J/\psi ightarrow \ \gamma K \overline{K}$	
• • • We do not u	se the follow	ing data for ave	erages	s, fits, lir	nits, etc. • • •	
< 3.6	3	DEL-AMO-SA.	.100	BABR	$e^+e^- \rightarrow J/\psi \rightarrow \gamma K$	$+ K^{-}$
< 2.9	3	DEL-AMO-SA.	.100	BABR	$e^+e^- \rightarrow J/\psi \rightarrow \gamma K$	$S_{j}K_{S}^{0}$
$6.6 \pm 2.9 \pm 2.4$		BAI	96B	BES	$e^+e^- \rightarrow J/\psi \rightarrow \gamma K$	$+K^{-}$
$10.8 \pm 4.0 \pm 3.2$		BAI	96B	BES	$e \cdot e \rightarrow J/\psi \rightarrow \gamma K$	SKS
¹ Using CLEO-c 2 For $\Gamma = 20/50$ I	data but not MeV, the 90%	authored by th 6 CL upper limit	e CLE ts for	EO Colla K ⁺ K ⁻	boration. and $K^0_S K^0_S$ are 1.7/3.1×	10-5
and $1.2/2.0 imes 1$ ³ For spin 2 and	10 ^{—5} , respec helicity 0; ot	tively. her combinatio	ns lea	d to mo	re stringent upper limits.	
$\Gamma\bigl(\gammaf_J(2220)\rightarrow$	$\gamma p \overline{p}) / \Gamma_{tot}$	al			۲ ₃	₃₁ /Г
<i>VALUE</i> (units 10 ⁻⁵)		DOCUMENT	ID	TEC	N COMMENT	
$1.5 \pm 0.6 \pm 0.5$		BAI	9	6B BES	$e^+e^- \rightarrow J/\psi \rightarrow J/\psi$	γ ρ Ρ
$\Gamma(\gamma f_0(2330) \rightarrow$	$\gamma K^{0}_{S} K^{0}_{S})$	Γ _{total}			Гз	₃₂ /Г
VALUE (units 10^{-5})		DOCUMEN	T ID	T	ECN <u>COMMENT</u>	
$4.95{\pm}0.21^{+0.66}_{-0.72}$		ABLIKIM		18AA B	ES3 $J/\psi \rightarrow \gamma \kappa^0_S \kappa^0_S$	
• • • We do not u	se the follow	ing data for ave	erages	s, fits, lir	nits, etc. • • •	
$0.6\ \pm 0.1$		SARANT	SEV	21 R	VUE $J/\psi(1S) \rightarrow \gamma (\pi K\overline{K}, \eta \eta, \omega \phi)$	π ,
$\Gamma(\gamma f_0(2330) \rightarrow$	$\gamma \pi \pi) / \Gamma_{tot}$	tal			Гз	₃₃₃ /Г
VALUE (units 10 ⁻⁵)	DOCUM	ENT ID T	ECN	СОММЕ	ENT	
• • • We do not u	se the follow	ing data for ave	erages	s, fits, lir	nits, etc. • • •	
4±2	SARAN	ITSEV 21 R	VUE	$J/\psi(1)$	$S) ightarrow \gamma(\pi\pi, \ K \overline{K}, \ \eta\eta, \ K$	$\omega \phi$)
$\Gamma(\gamma f_0(2330) \rightarrow$	$\gamma\eta\eta)/\Gamma_{ m tot}$	al			Гз	₃₄ /Г
VALUE (units 10^{-5})	DOCUM	ENT ID T	ECN	СОММЕ	ENT	-
• • • We do not u	se the follow	ing data for ave	erages	s, fits, lir	nits, etc. • • •	
1.5 ± 0.4	SARAN	ITSEV 21 R	VUE	$J/\psi(1)$	$S) ightarrow \gamma(\pi\pi, \ K \overline{K}, \ \eta\eta, \ K$	$\omega \phi$)
$\Gamma(\gamma f_0(2330) \rightarrow$	$\gamma \eta' \eta') / \Gamma_t$	otal			Гз	₃₃₅ /Г
VALUE (units 10^{-6})	DOCU	MENT ID	TECN	СОМ	MENT	
$6.09 \pm 0.64 \substack{+4.00 \\ -1.68}$	¹ ABLI	KIM 22C	BES	J/ψ	$\rightarrow \gamma \eta' \eta' \rightarrow 4/5 \gamma 2 (\pi^+$	⁻ π ⁻)
¹ From a partial $X \rightarrow \gamma \eta'$ in the by a constant-v	wave analys he decay J/q vidth, relativ	is of the system $\psi \rightarrow \gamma \eta' \eta'$. T istic Breit-Wign	hs (γ) he int ler.	X), with ermedia	$\mu \: X \to \:\: \eta' \: \eta', \:$ and $\: (\eta' \: X)$ te resonance $\: X \:$ is parame	, with trized

Citation: R.L. Workman et al. (Particle Data Group), Prog. Theor. Exp. Phys. 2022, 083C01 (2022) and 2023 update

$$\begin{aligned} \Gamma(\gamma f_0(2330) \rightarrow \gamma \eta \eta')/\Gamma_{total} & \Gamma_{336}/\Gamma \\ \hline MUUE (units 10^{-5}) & DOCUMENT ID & TECN & COMMENT \\ \bullet \bullet We do not use the following data for averages, fits, limits, etc. \bullet \bullet \bullet \\ 0.10 \pm 0.02 + 0.01 & 1 ABLIKIM 22AS BES3 & J/\psi(15) \rightarrow \gamma \eta \eta' \\ ^{1} From a Breit-Wigner fit involving 9 resonances and a resonating exotic $\eta_1(1855) \rightarrow \eta \eta' \\ P_{-Wave.} & \Gamma(\gamma f_0(2470) \rightarrow \gamma \eta' \eta')/\Gamma_{total} & \Gamma_{340}/\Gamma \\ \hline MUUE (units 10^{-7}) & DOCUMENT ID & TECN & COMMENT \\ \hline B.18 \pm 1.77 \pm 2.23 & 1 ABLIKIM 22C BES3 & J/\psi \rightarrow \gamma \eta' \eta' \rightarrow 4/5\gamma 2(\pi^+ \pi^-) \\ ^{1} From a partial wave analysis of the systems (γX) , with $X \rightarrow \eta' \eta'$, and $(\eta' X)$, with $X \rightarrow \gamma \eta' \eta'$ in the decay $J/\psi \rightarrow \gamma \eta' \eta'$. The intermediate resonance X is parametrized by a constant-width, relativistic Breit-Wigner. \\ \hline \Gamma(\gamma f_0(2340) \rightarrow \gamma \eta \eta)/\Gamma_{total} & \Gamma_{337}/\Gamma \\ \hline MUUE (units 10^{-5}) & EVTS & DOCUMENT ID & TECN & COMMENT \\ ^{1} From a partial wave analysis including all possible combinations of 0^{++} , 2^{++} , and 4^{++} resonances.
 $\Gamma(\gamma f_0(2340) \rightarrow \gamma \eta' \eta')/\Gamma_{total} & \Gamma_{339}/\Gamma \\ \hline MUUE (units 10^{-5}) & DOCUMENT ID & TECN & COMMENT \\ ^{1} ABLIKIM 22C BES3 & J/\psi \rightarrow \gamma \eta' \eta' \rightarrow 4/5\gamma 2(\pi^+ \pi^-) \\ ^{1} From a partial wave analysis including all possible combinations of 0^{++} , 2^{++} , and 4^{++} resonances.
 $\Gamma(\gamma f_0(2340) \rightarrow \gamma \eta' \eta')/\Gamma_{total} & Taga/\Gamma \\ \hline MUUE (units 10^{-5}) & DOCUMENT ID & TECN & COMMENT \\ ^{1} ABLIKIM 22C BES3 & J/\psi \rightarrow \gamma \eta' \eta', and (\eta' X), with X \rightarrow \gamma \eta' in the decay J/\psi \rightarrow \gamma \eta' \eta'. The intermediate resonance X is parametrized by a constant-width, relativistic Breit-Wigner. \\ \Gamma(\gamma f_0(2340) \rightarrow \gamma \pi' \pi^- \eta')/\Gamma_{total} & TECN & COMMENT \\ ^{1} Soft = 0.34 + 3.82 & DOCUMENT ID & TECN & COMMENT \\ ^{1} Soft = 0.43 + 3.82 & DOCUMENT ID & TECN & COMMENT \\ ^{2} 2 + 0.43 + 3.82 & DOCUMENT ID & TECN & COMMENT \\ ^{2} 2 + 0.63 & OLR AVERAGE & Error includes scale factor of 1.6 \\ ^{3} 3.91 (0.38 + 0.381 & 1 ABLIKIM 16J BES3 & J/\psi \rightarrow \gamma \pi$$$$$

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- $^1\,{\rm From}$ a fit of the measured $\pi^+\,\pi^-\,\eta'$ lineshape that accounts for the abrupt distortion observed at the $p \overline{p}$ threshold with a Flatte formula in addition to known backgrounds and contributors, as well as an *ad hoc* Breit-Wigner (M \approx 1919 MeV; $\Gamma \approx$ 51 MeV) that is required for a good fit. Another explanation for the distortion provided by ABLIKIM 16J is that a second resonance near 1870 MeV interferes with the X(1835); fits to this possibility yield product branching fraction values compatible with that shown within the respective systematic uncertainties.
- ² From a fit of the $\pi^+\pi^-\eta'$ mass distribution to a combination of $\gamma f_1(1510)$, $\gamma X(1835)$, and two states $\gamma X(2120)$ and $\gamma X(2370)$, for $M(\pi^+\pi^-\eta') < 2.8$ GeV, and accounting for backgrounds from non- η' events and $J/\psi \rightarrow \pi^0 \pi^+ \pi^- \eta'$.

$\Gamma(\gamma X(1835) \rightarrow \gamma \rho \overline{\rho}) / \Gamma_{\text{total}}$								
VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT			
$0.77^{+0.15}_{-0.09}$ OUR AVE	RAGE							
$0.90 ^{+0.04}_{-0.11} {}^{+0.27}_{-0.55}$		¹ ABLIKIM	12D	BES3	$J/\psi \rightarrow \gamma p \overline{p}$			
$1.14 \substack{+0.43 + 0.42 \\ -0.30 - 0.26}$	231	² ALEXANDER	10	CLEO	$J/\psi \rightarrow \gamma p \overline{p}$			
$0.70\!\pm\!0.04\!+\!0.19 \\ -0.08$		BAI	03F	BES2	$J/\psi \rightarrow \gamma \rho \overline{\rho}$			
-								

¹ From the fit including final state interaction effects in isospin 0 S-wave according to SIBIRTSEV 05A.

² From a fit of the $p\overline{p}$ mass distribution to a combination of $\gamma X(1835)$, γR with M(R)= 2100 MeV and $\Gamma(R) = 160$ MeV, and $\gamma p \overline{p}$ phase space, for $M(p \overline{p}) < 2.85$ GeV.

$\Gamma(\gamma X(1835) \rightarrow \gamma K^0_S K^0_S \eta) / \Gamma_{\text{total}}$					
VALUE (units 10 ⁻⁵)	DOCUMENT ID		TECN	COMMENT	
$3.31^{+0.33+1.96}_{-0.30-1.29}$	ABLIKIM	15⊤	BES3	$J/\psi ightarrow \ \gamma \kappa^0_S \kappa^0_S \eta$	

$\Gamma(\gamma X(1835) \rightarrow \gamma \gamma)$	Г ₃₄₄ /I					
VALUE (units 10 ⁻⁶)	EVTS	DOCUMENT IL)	TECN	COMMENT	
\bullet \bullet \bullet We do not use	the followin	ig data for averag	es, fits,	limits,	etc. ● ● ●	
$1.77\!\pm\!0.35\!\pm\!0.25$	305	¹ ABLIKIM	181	BES3	$J/\psi \rightarrow \gamma \gamma \phi$ (1020)	
$8.09 \!\pm\! 1.99 \!\pm\! 1.36$	1.3k	² ABLIKIM	181	BES3	$J/\psi \rightarrow \gamma \gamma \phi$ (1020)	

¹Constructive interference between the X(1835) and $\eta(1405)/\eta(1475)$ is assumed in a fit to the $\gamma \phi$ invariant mass.

²Destructive interference between the X(1835) and $\eta(1405)/\eta(1475)$ is assumed in a fit to the $\gamma \phi$ invariant mass.

$\Gamma(\gamma X(1835) \rightarrow \gamma \gamma)$	Г ₃₄₅ /I				
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT
$<3.56 \times 10^{-6}$	90	ABLIKIM	180	BES3	$\psi(2S) \rightarrow \pi^+ \pi^- \gamma \gamma \gamma$
$\Gamma(\gamma X(1835) \rightarrow \gamma 3)$	$B(\pi^{+}\pi^{-}))$	/Γ _{total}			Г ₃₄₆ /Г
VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
$2.44 {\pm} 0.36 {+} 0.60 {-} 0.74$	0.6k	ABLIKIM	13 U	BES3	$J/\psi \rightarrow \gamma 3(\pi^+\pi^-)$

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$\Gamma(\gamma X(2370) \rightarrow \gamma K^{+})$	⁻ <i>K</i> ⁻ η′)/Ι	- total				Г ₃₄₇ /Г
VALUE (units 10^{-5})		DOCUMENT ID		TECN	COMMENT	
$1.79 {\pm} 0.23 {\pm} 0.65$		ABLIKIM	20Q	BES3	$J/\psi \rightarrow \gamma K^{-1}$	$FK^{-}\eta'$
$\Gamma(\gamma X(2370) \rightarrow \gamma K_{S}^{0})$; <i>K</i> ⁰ _S η′)/Γ	total				Г ₃₄₈ /Г
VALUE (units 10^{-5})		DOCUMENT ID		TECN	COMMENT	
$1.18 {\pm} 0.32 {\pm} 0.39$		ABLIKIM	20Q	BES3	$J/\psi \rightarrow \gamma K_{S}^{0}$	$\frac{1}{5}\kappa^0_S\eta'$
$\Gamma(\gamma X(2370) \rightarrow \gamma \eta \eta$	$\eta')/\Gamma_{total}$	DOCUMENT ID		TECN	COMMENT	Г ₃₄₉ /Г
<9.2 × 10 ⁻⁶	90	ABLIKIM	21C	BES3	$J/\psi(1S) ightarrow$	$\gamma \eta \eta \eta'$
$\Gamma(\gamma p \overline{p}) / \Gamma_{\text{total}}$						Г ₃₅₀ /Г
VALUE (units 10^{-3})	CL% E	VTS DOCL	JMENT	ID	TECN COM	MENT
0.38±0.07±0.07		49 EAT	ON	84	MRK2 e^+e^-	e
$\bullet \bullet \bullet$ We do not use the	e following o	data for average	es, fits,	limits, e	etc. • • •	
<0.11	90	PER	UZZI	78	MRK1 e ⁺ e	
$\Gamma(\gamma p \overline{p} \pi^+ \pi^-) / \Gamma_{\text{tota}}$	I					Г ₃₅₁ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT	
<0.79 × 10 ⁻⁵	90	EATON	84	MRK2	e ⁺ e ⁻	
$\Gamma(\gamma \Lambda \overline{\Lambda}) / \Gamma_{\text{total}}$				TECN	COMMENT	Г ₃₅₂ /Г
$\sim 13 \times 10^{-3}$	<u> </u>		97		$\frac{COMMENT}{a^+a^-}$	
• • • We do not use the	e following o	data for average	es, fits,	limits, e	etc. • • •	
$< 0.16 imes 10^{-3}$	90	BAI	98G	BES	e^+e^-	
$\Gamma(\gamma A^0 \rightarrow \gamma \text{ invisible})$	/Γ _{total}					Г ₃₅₃ /Г
VALUE CL%	EVTS	DOCUMENT ID		TECN	COMMENT	
<1.7 × 10 ⁻⁶ 90	88M	¹ ABLIKIM	20K	BES3	$\psi(2S) ightarrow J/$	$\psi \pi^+ \pi^-$
• • We do not use the	e following o	data for average	es, fits,	limits, e	etc. • • •	
$< 6.3 \times 10^{-6}$ 90	3.7M	² INSLER	10	CLEO	$\psi(2S) \rightarrow J/$	$\psi \pi^+ \pi^-$
¹ For a narrow state, A	⁰ , with mas	$m_{A^0} < 1.2 { m C}$	GeV. T	he limit v	varies with <i>m</i> A	₀ , reaching
its largest value of 1	$.7 imes 10^{-6}$ a	at 1.2 GeV and	being	7.0 imes 10	-1 for $m_{A^0} =$	= 0.
² The limit varies with	mass m_{A^0}	of a narrow sta	ate A ⁰	and is 4	$.3 imes 10^{-6}$ for	$m_{A^0} = 0$,
reaches its largest va $=$ 960 MeV.	lue of 6.3 \times	10^{-6} at m_{A^0}	= 500	MeV, a	nd is $3.6 imes 10^{-1}$	-6 _{at} <i>m</i> A ⁰
$\Gamma(\gamma A^0 \rightarrow \gamma \mu^+ \mu^-)/$	Γ _{total}					Г ₃₅₄ /Г
(narrow state A^0 wit	h 0.2 GeV	′ < m _{A0} < 3	GeV)			
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT	
<7.8 × 10 ⁻⁷	90	^I ABLIKIM	22H	BES3	$J/\psi \rightarrow \gamma \mu^+$	μ^{-}
• • • We do not use the	e tollowing o	data for average	es, fits,	limits, e	etc. • • •	
$< 0.5 \times 10^{-5}$ $< 2.1 \times 10^{-5}$	90 90	[∠] ABLIKIM ³ ABLIKIM	16E 12	BES3 BES3	$J/\psi \to \gamma \mu^+ J/\psi \to \gamma \mu^+$	$\mu^{-}_{\mu^{-}}$
https://pdg.lbl.gov		Page 87		Creat	ed: 4/29/20	24 18:57

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- ¹ For a narrow scalar or pseudoscalar, A^0 , with a mass in the range 0.212–3.0 GeV. The measured 90% CL limit as a function of m_{A^0} is in the range $(1.2-778.0) \times 10^{-9}$.
- 2 For a narrow scalar or pseudoscalar, A^0 , with a mass in the range 0.212–3 GeV. The measured 90% CL limit as a function of $m_{\Delta 0}$ is in the range (2.8–495.3) $\times 10^{-8}$.
- 3 For a narrow scalar or pseudoscalar, A^0 , with a mass in the range 0.21–3.00 GeV. The measured 90% CL limit as a function of $m_{\Lambda 0}$ ranges from 4×10^{-7} to 2.1×10^{-5} .



VALUE (units 10 °)	EVIS	DOCUMENT ID		TECN	COMMENT
$1.42 \pm 0.04 \pm 0.07$	2.47k	^{1,2} ABLIKIM	19A	BES3	$J/\psi \rightarrow \eta e^+ e^-$
$\bullet \bullet \bullet$ We do not use th	ne followi	ng data for average	s, fits,	limits,	etc. ● ● ●

 $1.16\!\pm\!0.07\!\pm\!0.06$ 320 ¹ ABLIKIM 14 BES3 $J/\psi \rightarrow \eta e^+ e^-$

¹Using both $\eta \rightarrow \gamma \gamma$ and $\eta \rightarrow \pi^+ \pi^- \pi^0$ decays.

² Approximation of the transition form factor squared as an incoherent sum of the ρ -meson and one-pole non-resonant amplitudes gives the pole mass m(Λ) = 2.56 ± 0.04 ± 0.03 GeV. Supersedes ABLIKIM 14I.

$\Gamma(\eta'(958)e^+e^-)/\Gamma_{total}$

VALUE (units 10^{-5}) EVTS <u>DOCUME</u>NT ID TECN COMMENT 19н BES3 $J/\psi \rightarrow \eta'$ (958) e^+e^- ¹ ABLIKIM $6.59 \pm 0.07 \pm 0.17$ 8.9k • • • We do not use the following data for averages, fits, limits, etc. • • 1.4k ^{1,2} ABLIKIM 14I BES3 $J/\psi \rightarrow \eta'(958) e^+ e^ 5.81 \!\pm\! 0.16 \!\pm\! 0.31$ ¹Using both $\eta' \rightarrow \gamma \pi^+ \pi^-$ and $\eta' \rightarrow \pi^+ \pi^- \eta$ decays. ²Superseded by ABLIKIM 19H.

$\Gamma(X(1835)e^+e^-)$	$X \to \pi^{-}$	$^{+}\pi^{-}\eta^{\prime})/\Gamma_{ m total}$			Г ₃₅₈ /Г	
VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT	
$3.58 {\pm} 0.19 {\pm} 0.16$	1364	¹ ABLIKIM	22в	BES3	$J/\psi \rightarrow \pi^+\pi^-\eta' e^+e^-$	
$^1\text{Assuming}$ constructive interference. Destructive interference gives a value of (4.43 \pm 0.23 \pm 0.19) $\times10^{-6}$ for this branching fraction.						
$\Gamma(X(2120)e^+e^-)$	$X \rightarrow \pi^{-}$	$^{+}\pi^{-}\eta^{\prime})/\Gamma_{total}$			Г ₃₅₉ /Г	
VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT	
$0.82 {\pm} 0.12 {\pm} 0.06$	310	ABLIKIM	22B	BES3	$J/\psi \rightarrow \pi^+\pi^-\eta' e^+e^-$	
$\Gamma(X(2370)) = + = -$	X → π ⁼	$+\pi^{-}n'$)/ Γ			Г260/Г	

(X(2510)C C	, / / /	" ' <i>') /</i> ' total			· 300/ ·
VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
$1.08 {\pm} 0.14 {\pm} 0.10$	397	ABLIKIM	22 B	BES3	$J/\psi ightarrow \pi^+\pi^-\eta' e^+e^-$

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 Γ_{357}/Γ

$\Gamma(\eta U \rightarrow \eta e^+ e^-)$	/Γ _{total}			Г ₃₆₁ /	۲
VALUE	<u>CL%</u>	DOCUMENT ID	TECN	COMMENT	
<9.11 × 10 ⁻⁷	90	¹ ABLIKIM	19A BES3	$J/\psi ightarrow \eta e^+ e^-$	
¹ For a dark photor as a function of <i>n</i>	n U with ma n _U range fro	ass between 10 an om $1.9 imes 10^{-8}$ to	d 2400 MeV. 91.1 \times 10 ⁻⁸	Obtained 90% C.L. lim	its
$\Gamma(\eta'(958) U \rightarrow \eta'($	(958) <i>e</i> + <i>e</i> ⁼		TECN	Г ₃₆₂ /	′Γ
$\sim 10^{-7}$	<u> </u>		104 RES2	$\frac{COMMENT}{1/4} \rightarrow m'(058) a^{+} a^{-}$	_
¹ For a dark photor as a function of <i>r</i> on the branching	U with manual m_U range fr fraction J/y	ass between 100 ar om 1.8×10^{-8} to $\psi \rightarrow \eta' U$ range fr	and 2100 MeV. 2.0×10^{-7} . om 5.7 × 10 ⁻⁷	Obtained 90% C.L. lim The corresponding lim ⁸ to 7.4×10^{-7} .	its its
$\Gamma(\phi e^+ e^-) / \Gamma_{\text{total}}$				Г ₃₆₃ /	/ Г
VALUE (units 10^{-7})	CL%	DOCUMENT ID	TECN	COMMENT	
<1.2	90	¹ ABLIKIM	19AB BES3	$J/\psi \rightarrow \phi e^+ e^-$	
$egin{array}{ccc} 1 \ {\sf Using} \ {\sf B}(\phi ightarrow {\it K} \ 0.30)\%. \end{array}$	$+K^{-}) = ($	48.9 \pm 0.5)% and	$B(\psi(2S) \rightarrow$	$\pi^+\pi^- J/\psi$) = (34.49	±
		- WEAK DECA	NYS	_	
$\Gamma(D^-e^+\nu_e^+ c.c.)$)/Γ _{total}			Г ₃₆₄ /	′Г
VALUE	<u>CL%</u>	DOCUMENT ID	TECN	COMMENT	
<7.1 × 10 ⁻⁰	90	ABLIKIM	21Q BES3	$e^+e^- \rightarrow J/\psi$	
• • • Vve do not use	the followin	g data for average	s, fits, limits,	etc. • • • • $+$	
$<1.2 \times 10^{-5}$	90	ABLIKIM	06M BES2	$e^+e^- ightarrow J/\psi$	
$\Gamma(\overline{D}^0 e^+ e^- + \text{c.c.})$)/Γ _{total}			Г ₃₆₅ /	Γ
VALUE	<u>CL%</u>	DOCUMENT ID	TECN	COMMENT	
<8.5 × 10 ⁻⁸	90	¹ ABLIKIM	17AF BES3	$e^+e^- ightarrow J/\psi$	
• • • We do not use	the followin	g data for average	s, fits, limits,	etc. ● ● ●	
$<1.1 \times 10^{-5}$	90	ABLIKIM	06M BES2	$e^+ e^- ightarrow J/\psi$	
¹ Using <i>D</i> ⁰ decays	to $K^-\pi^+$,	$K^-\pi^+\pi^0$, and K	$(-\pi^{+}\pi^{+}\pi^{-})$		
$\Gamma(D_{s}^{-}e^{+}\nu_{e}+\text{c.c.})$)/Γ _{total}			Г ₃₆₆ /	Γ
VALUE	<u>CL%</u>	DOCUMENT ID	TECN	COMMENT	
<1.3 × 10 ⁻⁶	90	ABLIKIM	14R BES3	$e^+e^- ightarrow J/\psi$	
• • • We do not use	the followin	g data for average	s, fits, limits,	etc. • • •	
$< 3.6 \times 10^{-5}$	90	¹ ABLIKIM	06M BES2	$e^+e^- ightarrow ~J/\psi$	
1 Using B($D_{m{s}}^- o$	$\phi\pi^{-}$) = 4.4	4 ± 0.5 %.			
$\Gamma(D_s^{*-}e^+\nu_e+c.c)$.)/Γ _{total}			Г ₃₆₇ /	/Γ
VALUE	<u>CL%</u>	DOCUMENT ID	TECN	COMMENT	
<1.8 × 10 ⁻⁶	90	ABLIKIM	14R BES3	$e^+e^- ightarrow J/\psi$	

$\Gamma(D^-\pi^++\text{c.c.})$	/Γ _{total}				Г ₃₆₈ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT
<7.5 × 10 ⁻⁵	90	ABLIKIM	08J	BES2	$e^+e^- ightarrow J/\psi$
$\Gamma(\overline{D}^0 \overline{K}^0 + \text{c.c.})/$	Γ _{total}				Г ₃₆₉ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT
<1.7 × 10 ⁻⁴	90	ABLIKIM	08J	BES2	$e^+e^- ightarrow J/\psi$
$\Gamma(\overline{D}^{0}\overline{K}^{*0}+\text{c.c.})$	/Γ _{total}				Г ₃₇₀ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT
<2.5 × 10 ⁻⁶	90	ABLIKIM	14K	BES3	$e^+e^- ightarrow J/\psi$
$\Gamma(D_s^-\pi^+ + \text{c.c.}))$	/Γ _{total}				Г ₃₇₁ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT
<1.3 × 10 ⁻⁴	90	ABLIKIM	08J	BES2	$e^+e^- ightarrow J/\psi$
$\Gamma(D_s^- \rho^+ + \text{c.c.})/$	/F _{total}				Г ₃₇₂ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT
<1.3 × 10 ⁻⁵	90	ABLIKIM	14K	BES3	$e^+e^- ightarrow J/\psi$
((C) I	PARIT	Y (P)
<1.3 × 10 ⁻⁵	90 CHARGE CC	ABLIKIM	14к С), І	BES3	$\frac{connent}{e^+e^-} \rightarrow J/\psi$ Y (P),

— LEPTON FAMILY NUMBER (LF) VIOLATING MODES —

$\Gamma(\gamma\gamma)/\Gamma_{total}$					Г ₃₇₃ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT
$< 2.7 \times 10^{-7}$	90	ABLIKIM	14Q	BES3	$\psi(2S) \rightarrow \pi^+ \pi^- J/\psi$
\bullet \bullet \bullet We do not use	the followir	ng data for average	es, fits,	limits, e	etc. • • •
$<0.5\times10^{-5}$	90	ADAMS	08	CLEO	$\psi(2S) \rightarrow \pi^+ \pi^- J/\psi$
$< 1.6 \times 10^{-4}$	90	¹ WICHT	08	BELL	$B^{\pm} \rightarrow K^{\pm} \gamma \gamma$
$< 2.2 imes 10^{-5}$	90	ABLIKIM	07J	BES2	$\psi(2S) \rightarrow J/\psi \pi^+ \pi^-$
$< 50 \times 10^{-5}$	90	BARTEL	77	CNTR	e ⁺ e ⁻
1 WICHT 08 report	ts [Γ(/////(1)	$(5) \rightarrow \alpha \alpha / \Gamma$		$B^+ \rightarrow$	$1/2/(15) K^{+}) < 0.16 \times$

¹ WICHT 08 reports $[\Gamma(J/\psi(1S) \rightarrow \gamma \gamma)/\Gamma_{\text{total}}] \times [B(B^+ \rightarrow J/\psi(1S)K^+)] < 0.16 \times 10^{-6}$ which we divide by our best value $B(B^+ \rightarrow J/\psi(1S)K^+) = 1.020 \times 10^{-3}$.

$\Gamma(\gamma \phi) / \Gamma_{\text{total}}$					Г ₃₇₄ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT
$<1.4 \times 10^{-6}$	90	ABLIKIM	14Q	BES3	$\psi(2S) \rightarrow \pi^+ \pi^- J/\psi$
$\Gamma(e^{\pm}\mu^{\mp})/\Gamma_{ m total}$					Г ₃₇₅ /Г
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT
<1.6 × 10 ⁻⁷	90	ABLIKIM	13L	BES3	$e^+e^- ightarrow J/\psi$
\bullet \bullet \bullet We do not use the	he following	data for averages	s, fits,	limits,	etc. ● ● ●
$< 1.1 \times 10^{-6}$	90	BAI	03 D	BES	$e^+e^- ightarrow J/\psi$

$\Gamma(e^{\pm}\tau^{\mp})/\Gamma_{total}$						Г ₃₇₆ /Г
VALUE	CL%	DOCUMENT ID		TECN	COMMENT	
<7.5 × 10 ⁻⁸	90	ABLIKIM	21M	BES3	$e^+e^- \rightarrow J$	$/\psi$
• • • We do not use the	ne following	g data for averages	s, fits,	limits, e	etc. • • •	
$< 8.3 imes 10^{-6}$	90	¹ ABLIKIM	04	BES	$e^+e^- \rightarrow J$	$/\psi$
1 Superseded by ABL	IKIM 21M.					
$\Gamma(\mu^{\pm} au^{\mp}) / \Gamma_{ ext{total}}$						Г ₃₇₇ /Г
VALUE	CL%	DOCUMENT ID		TECN	COMMENT	
<2.0 × 10 ⁻⁶	90	ABLIKIM	04	BES	$e^+e^- \rightarrow J$	$/\psi$
$\Gamma(\Lambda_c^+ e^- + \text{c.c.})/\Gamma_{\text{tor}}$	tal					Г ₃₇₈ /Г
VALUE	<u>CL%</u>	DOCUMENT ID	<u> </u>	<u>ECN</u> C	OMMENT	
<6.9 × 10 ^{—8}	90	ABLIKIM 1	9af B	ES3 e	$^+e^- \rightarrow J/\psi$	\rightarrow
					pK ⁻ π ⁺ e ⁻	(+ c.c.)
		OTHER DECA	YS -		-	
$\Gamma(\text{invisible})/\Gamma(e^+e^-)$	-)					Г ₃₇₉ /Г ₅
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT	
$< 6.6 \times 10^{-2}$	90	LEES	131	BABR	$B \rightarrow K^{(*)}$	I/ψ
$\Gamma(invisible)/\Gamma(\mu^+\mu)$	-)					Г ₃₇₉ /Г ₇
VALUE	<u>CL%</u>	DOCUMENT ID		TECN	COMMENT	
$<1.2 \times 10^{-2}$	90	ABLIKIM	08 G	BES2	$\psi(2S) \rightarrow \pi$	$+\pi^{-}J/\psi$

 $J/\psi(1S)$ REFERENCES

ABLIKIM	23BD	PR D108 092002	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	23BU	PR D108 112012	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	23S	PR D107 072005	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ANASHIN	23	JHEP 2306 196	V.V. Anashin <i>et al.</i>	(KEDR Collab.)
GONG	23	PR D107 072008	G. Gong <i>et al.</i>	(BELLE Collab.)
LEES	23	PR D107 072001	J.P. Lees <i>et al.</i>	(BABAR Collab.)
LIAO	23	PR D107 112007	L. Liao <i>et al.</i>	
ZHU	23	PR D107 012006	W. Zhu <i>et al.</i>	(BELLE Collab.)
ABLIKIM	22AI	PRL 129 192002	M. Ablikim <i>et al.</i>	(BESIII Collab.)
Also		PR D106 072012	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	22AS	PR D106 072012	M. Ablikim <i>et al.</i>	(BESIII Collab.)
Also		PR D107 079901	(errat.) M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	22AY	PR D106 112007	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	22B	PRL 129 022002	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	22C	PR D105 072002	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	22H	PR D105 012008	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ANASHIN	22	EPJ C82 938	V.V. Anashin <i>et al.</i>	(KEDR Collab.)
ABLIKIM	21AM	PR D104 092004	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	21AT	JHEP 2111 226	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	21C	PR D103 012009	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	21M	PR D103 112007	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	21Q	JHEP 2106 157	M. Ablikim <i>et al.</i>	(BESIII Collab.)
LEES	21	PR D103 092001	J.P. Lees <i>et al.</i>	(BABAR Collab.)
LEES	21B	PR D104 112003	J.P. Lees <i>et al.</i>	(BABAR Collab.)
LEES	21C	PR D104 112004	J.P. Lees <i>et al.</i>	(BABAR Collab.)
SARANTSEV	21	PL B816 136227	A.V. Sarantsev et al.	(BONN, PNPI)
ABLIKIM	20	PR D101 012004	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	20K	PR D101 112005	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	20Q	EPJ C80 746	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ANASHIN	20	JHEP 2007 112	V.V. Anashin <i>et al.</i>	(KEDR Collab.)

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ABLIKIM	19A	PR D99 012006	M. Ablikim <i>et al.</i>	(BESIII Collab.)
Also		PR D104 099901	(errat.) M. Ablikim <i>et al.</i>	(BESIII Collab.)
	10 A D	DR D00 052010	M Ablikim at al	(PESIII Collab.)
	ISAD	TR D99 032010	WI. ADIIKIIII et al.	
ARTIKIM	19AC	PR D99 071101	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	19AF	PR D99 072006	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	19AN	PR D99 112008	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	19AQ	PR D100 032004	M Ablikim et al	(BESIII, Collab.)
	100	DR D00 012012	M Abilian at al	(DESIII Collab.)
	1911	FR D99 012013	IVI. ADIKITI EL al.	
ABLIKIM	191	PR D99 032006	M. Adlikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	19Q	PL B791 375	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	19T	PRL 122 142002	M. Ablikim <i>et al.</i>	(BESIII Collab.)
111	10	PR D00 032003	P-C lu et al	(BELLE Collab.)
	10 / /	DD D09 072002	M Abilian at al	(DEELE Collab.)
	TOAA	PR D96 072005	IVI. ADIKIM <i>et al.</i>	
ABLIKIM	18AB	PR D98 072005	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	18D	PRL 121 022001	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	18I	PR D97 051101	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	180	PR D97 072014	M Ablikim et al	(BESIII, Collab.)
	180	IHED 1805 110	VV Anashin at al	(KEDR Collab.)
	104		V.V. Anasini et al.	
LEES	18	PR D97 052007	J.P. Lees <i>et al.</i>	(BABAR Collab.)
LEES	18E	PR D98 112015	J.P. Lees <i>et al.</i>	(BABAR Collab.)
ABLIKIM	17AF	PR D96 111101	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABI IKIM	17AH	PR D96 112001	M Ablikim <i>et al</i>	(BESIII Collab.)
	17AK	PR D06 112001	M Ablikim at al	(BESIII Collab.)
		DI D770 017		
ABLIKIM	1/E	PL B//0 21/	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	17L	PR D95 052003	M. Ablikim <i>et al.</i>	(BESIII Collab.)
LEES	17A	PR D95 052001	J.P. Lees <i>et al.</i>	(BABAR Collab.)
LEES	17C	PR D95 072007	IP Lees et al	(BABAR Collab.)
	170			(BARAR Collab.)
	1/0	FR D95 092005	J.F. Lees et al.	
ABLIKIM	10E	PR D93 052005	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	16J	PRL 117 042002	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	16K	PR D93 052010	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	161	PR D93 072003	M Ablikim <i>et al</i>	(BESIII, Collab.)
	16M	DD D02 072000	M Ablikim at al	(PESIII Collab.)
	10101	FR D95 072000	IVI. ADIKITI EL al.	
ABLIKIM	TOIN	PR D93 112011	M. Adlikim	(BESIII Collab.)
ABLIKIM	16P	PR D94 072005	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	16Q	PL B761 98	M. Ablikim <i>et al.</i>	(BESIII Collab.)
PDG	16	CP C40 100001	C. Patrignani <i>et al</i>	(PDG_Collab.)
	15RI	EPI (75 311	R Apii et al	(LHCh Collab.)
			M Ablibing at al	
ABLIKIN	15AE	PR D92 052003	IVI. ADIIKIM <i>et al.</i>	(BESIII Collab.)
ABLIKIM	15H	PR D91 052017	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	15K	PR D91 112001	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	15P	PR D92 012007	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	15T	PRI 115 091803	M Ablikim et al	(BESIII Collab.)
	15	PI 8740 50	VV Aposhin of al	(KEDR Collab.)
	15	DD D01 050000		
DOBR2	15	PR D91 052006	S. Dobbs et al.	(INVVES)
LEES	15J	PR D92 072008	J.P. Lees <i>et al.</i>	(BABAR Collab.)
ABLIKIM	14I	PR D89 092008	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABI IKIM	14K	PR D89 071101	M Ablikim <i>et al</i>	(BESIII Collab.)
	1/N	PR D00 052000	M Ablikim et al	(BESIII Collab.)
	140	DD D00 002003	M Ablibing at al	
ABLIKIN	14Q	PR D90 092002	IVI. ADIIKIM <i>et al.</i>	(BESIII Collab.)
ABLIKIM	14R	PR D90 112014	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ANASHIN	14	PL B738 391	V.V. Anashin <i>et al.</i>	(KEDR Collab.)
AULCHENKO	14	PL B731 227	V.M. Aulchenko <i>et al.</i>	(KEDR_Collab.)
LEES	14H	PR D80 002002	IP lees et al	(BABAR Collab.)
	12E	DD D07 052002	M Ablikim at al	(DRESIII Collab.)
	101	PR D67 052007	IVI. ADIKIM <i>et al.</i>	
ABLIKIM	131	PR D87 032003	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	13J	PR D87 032008	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	13L	PR D87 112007	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	13N	PR D87 092009	M. Ablikim <i>et al</i>	(BESIII Collab)
	13P	PR D87 11200/	M Ablikim et al	(RESIL Callab.)
	120	DD D00 020007		
	13K	FK D00 03200/	IVI. ADIIKIM <i>et al.</i>	(BESIII Collab.)
ABLIKIM	13U	PR D88 091502	M. Ablikim <i>et al.</i>	(BESIII Collab.)
LEES	13I	PR D87 112005	J.P. Lees <i>et al.</i>	(BABAR Collab.)
LEES	130	PR D87 092005	J.P. Lees et al	(BABAR Collab)
LEES	130	PR D88 032013	IP Lees et al	(BARAR Collab.)
	121/	DD D00 070000	$\int D \int de a d t = 1$	
	10	FR D00 0/2009	J.F. Lees et al.	(DABAK COND.)
ABLIKIM	12	PR D85 092012	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	12B	PR D86 032008	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	12C	PR D86 032014	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	12D	PRL 108 112003	M. Ablikim et al	(BESIII Collab.)
	120	PI R710 504	M Ablikim at al	(RECIII Callab.)
	1411	1 L DIIV J94		(BESHI CONAD.)

ABLIKIM	12P	CP C36 1031	M. Ablikim <i>et al.</i>	(BES_II_Collab.)
	100	DD D95 110000		(PARAD Callah)
LEES	120	PR D65 112009	J.P. Lees et al.	(DADAR Collab.)
LEES	12F	PR D86 012008	J.P. Lees <i>et al.</i>	(BABAR Collab.)
METREVELL	12	DB D85 002007	7 Motrovoli at al	
	12	TR D03 092007		(10023, 1201, 00011)
ABLIKIM	11	PR D83 012003	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	11C	PRL 106 072002	M. Ablikim <i>et al.</i>	(BESIII Collab.)
	11D	DD D02 02002	M Ablikim at al	(PESIII Collab.)
ADLINIVI	ΠD	PR D05 052005	IVI. ADIIKIM <i>et al.</i>	(DESIT Collab.)
ABLIKIM	10C	PL B685 27	M. Ablikim <i>et al.</i>	(BES II Collab.)
ARI IKIM	10F	PI 8603 88	M Ablikim et al	(BES II Collab)
	10			
ALEXANDER	10	PR D82 092002	J.P. Alexander <i>et al.</i>	(CLEU Collab.)
ANASHIN	10	PL B685 134	V.V. Anashin <i>et al.</i>	(KEDR Collab.)
	100	DRI 105 172001	P dol Amo Sanchoz at al	(BABAR Collab)
DEL-ANIO-JA	. 100	TRE 105 172001	T. del Allio Salichez et al.	(DADAR Collab.)
INSLER	10	PR D81 091101	J. Insler <i>et al.</i>	(CLEO Collab.)
ABI IKIM	09	PI B676 25	M Ablikim <i>et al</i>	(BES Collab.)
	000		M Abliking at al	(PES II Callab.)
ADLINIVI	09D	PK D60 052004	IVI. ADIIKIM <i>et al.</i>	(DES II Collab.)
MITCHELL	09	PRL 102 011801	R.E. Mitchell <i>et al.</i>	(CLEO Collab.)
PEDI AR	00	PR D79 111101	TK Pedlar et al	(CLEO, Collab)
	00			
SHEN	09	PR D80 031101	C.P. Shen <i>et al.</i>	(BELLE Collab.)
ABLIKIM	08	EPJ C53 15	M. Ablikim <i>et al.</i>	(BES Collab.)
	08.0	PP D77 012001	M Ablikim at al	(RES Collab.)
	004		IVI. ADIKITI EL al.	
ABLIKIM	08C	PL B659 789	M. Ablikim <i>et al.</i>	(BES Collab.)
ABI IKIM	08F	PR D77 032005	M Ablikim <i>et al</i>	(BES_Collab.)
	00	DDI 100 102002	M Abliking at al	(PEC Callab)
ABLININ	08F	PRL 100 102003	IVI. Adlikim <i>et al.</i>	(BES Collab.)
ABLIKIM	08G	PRL 100 192001	M. Ablikim <i>et al.</i>	(BES Collab.)
ARLIKIM	081	PL B662 330	M Ablikim et al	(BES Collab)
	001	TE D002 330		
ABLIKIM	08J	PL B663 297	M. Ablikim <i>et al.</i>	(BES Collab.)
ABLIKIM	080	PR D78 092005	M. Ablikim <i>et al.</i>	(BES Collab.)
	00	DDI 101 101001	C.C. Adama at al	
ADAIVIS	00	PRL 101 101601	G.S. Adams et al.	(CLEO Collab.)
AUBERT	08S	PR D77 092002	B. Aubert <i>et al.</i>	(BABAR Collab.)
RESSON	08	PR D78 032012	D Besson et al	(CLEO, Collab.)
DDC	00			
PDG	08	PL B007 1	C. Amsler <i>et al.</i>	(PDG Collab.)
WICHT	08	PL B662 323	J. Wicht <i>et al.</i>	(BELLE Collab.)
ARLIKIM	07H	PR D76 002003	M Ablikim et al) (BES Collab)
	0711	TR D70 032003		
ABLIKIM	07J	PR D76 117101	M. Ablikim <i>et al.</i>	(BES Collab.)
ANDREOTTI	07	PL B654 74	M. Andreotti <i>et al.</i>	(Femilab E835 Collab.)
ALIBERT	07 A K	PP D76 012008	B Aubort at al	(BABAR Collab.)
AUDENT	UTAN	TR D70 012000	D. Aubert et al.	(DADAR Collab.)
AUBERT	07AU	PR D76 092005	B. Aubert <i>et al.</i>	(BABAR Collab.)
Also		PR D77 119902E	(errat.) B. Aubert <i>et al.</i>	(BABAR Collab.)
ALIDEDT		DD D76 002006	P Aubort at al	(PARAR Collab.)
AUBLIN	0160	FK D70 092000	D. Aubert et al.	(BABAR Collab.)
ABLIKIM	06	PL B632 181	M. Ablikim <i>et al.</i>	(BES Collab.)
ABI IKIM	06C	PI B633 681	M Ablikim et al	(BES Collab.)
	000	DD D72 052000		
ABLINIW	00E	PR D73 052008	IVI. ADIIKIM <i>et al.</i>	(BES Collab.)
ABLIKIM	06F	PR D73 052007	M. Ablikim <i>et al.</i>	(BES Collab.)
ABI IKIM	06H	PR D73 112007	M Ablikim et al	(BES_Collab.)
	0011			
ABLIKIM	00J	PRL 96 162002	IVI. Adlikim <i>et al.</i>	(BES Collab.)
ABLIKIM	06K	PRL 97 062001	M. Ablikim <i>et al.</i>	(BES II Collab.)
	06M	PL R630 /18	M Ablikim et al	(BES Collab)
		DL DC40 441		
ABLIKIM	00 V	PL B042 441	IVI. Adlikim <i>et al.</i>	(BES Collab.)
ADAMS	06A	PR D73 051103	G.S. Adams <i>et al.</i>	(CLEO Collab.)
ALIBERT	06	PR D73 011101	R Aubert et al	(BABAR Collab)
AUDEDT	00			
AUBERT	06B	PR D73 012005	B. Aubert <i>et al.</i>	(BABAR Collab.)
AUBERT	06D	PR D73 052003	B. Aubert <i>et al.</i>	(BABAR Collab.)
ALIBERT RE	06D	PP D74 001103	B Aubort at al	(BABAR Collab.)
AUDENT, DE	000	TR D74 091103	D. Aubert et al.	(DADAR Collab.)
WU	06	PRL 97 162003	CH. Wu <i>et al.</i>	(BELLE Collab.)
ABLIKIM	05	PL B607 243	M. Ablikim <i>et al.</i>	(BES Collab.)
	05B	PP D71 032003	M Ablikim at al	(BES Collab.)
	050	TK D71 052005	IVI. ADIKITI EL al.	
ABLIKIM	05C	PL B610 192	M. Ablikim <i>et al.</i>	(BES Collab.)
ABLIKIM	05H	PR D72 012002	M. Ablikim <i>et al.</i>	(BES Collab.)
	05P	PRI 05 262001	M Ablikim at al	(RES Collab.)
	0.51	TIL 35 202001		
AUBERI	05D	PR D71 052001	B. Aubert <i>et al.</i>	(BABAR Collab.)
LI	05C	PR D71 111103	Z. Li et al.	(CLEO Collab)
		DR D71 054010	A Sibirtony I Haidanbarra	(0220 00100.)
JIDIRIJEV	ACU		A. Sibirtsev, J. Haldenbauer	
ABLIKIM	04	PL B598 172	M. Ablikim <i>et al.</i>	(BES Collab.)
ABLIKIM	04M	PR D70 112008	M. Ablikim <i>et al</i>	(BES_Collab.)
ALIDEDT	04	DD D60 011102	P Aubort at al	(PAPAD Callet)
	04		D. Aubert et al.	(DADAK COLLAD.)
AUBERT,B	04N	PR D70 072004	B. Aubert <i>et al.</i>	(BABAR Collab.)
BAI	04A	PR D69 012003	J.Z. Bai <i>et al</i>	(BES Collab.)
BAI	040	DI R580 7	17 Bai at al	(DEC Collab.)
	040	IL D009 /		(DES CONAD.)
BAI	04E	PL B591 42	J.Z. Bai <i>et al.</i>	(BES Collab.)
BAI	04G	PR D70 012004	J.Z. Bai <i>et al.</i>	(BES_Collab.)
BAI		DD D70 012004	17 Bai at al	(DEC Callab.)
DAI	U4Π	11 010 012005	J.L. Dal et dl.	(DES CONAD.)

BAI	04.1	DI 850/ /7	17 Bai at al	(RES Collab)
SETH	045	PR D69 097503	KK Seth	(BES Collab.)
AUI CHENKO	03	PL B573 63	V M Aulchenko <i>et al</i>	(KEDR_Collab_)
BAI	03D	PL B561 49	J.Z. Bai <i>et al.</i>	(BES Collab.)
BAI	03F	PRL 91 022001	J.Z. Bai <i>et al.</i>	(BES II Collab.)
BAI	03G	PR D68 052003	J.Z. Bai <i>et al.</i>	(BES Collab.)
HUANG	03	PRL 91 241802	HC. Huang <i>et al.</i>	(BÈLLE Collab.)
BAI	02C	PRL 88 101802	J.Z. Bai <i>et al.</i>	(BES Collab.)
ARTAMONOV	00	PL B474 427	A.S. Artamonov <i>et al.</i>	
BAI	00	PRL 84 594	J.Z. Bai <i>et al.</i>	(BES Collab.)
BAI	00B	PL B472 200	J.Z. Bai <i>et al.</i>	(BES Collab.)
BAI	00D	PL B476 25	J.Z. Bai et al.	(BES Collab.)
BAI	99	PL B440 350	J.Z. Bai et al.	(BES Collab.)
BAI	99C	PR D58 002006	J.Z. Dai et al.	(BES Collab.)
BAI	98G	PI B424 213	IZ Bai et al	(BES Collab.)
BAI	98H	PRL 81 1179	J.Z. Bai <i>et al.</i>	(BES Collab.)
BALDINI	98	PL B444 111	R. Baldini <i>et al.</i>	(FENICE Collab.)
ARMSTRONG	96	PR D54 7067	T.A. Armstrong et al.	(E760 Collab.)
BAI	96B	PRL 76 3502	J.Z. Bai <i>et al.</i>	(BES Collab.)
BAI	96C	PRL 77 3959	J.Z. Bai <i>et al.</i>	(BES Collab.)
BAI	96D	PR D54 1221	J.Z. Bai <i>et al.</i>	(BES Collab.)
GRIBUSHIN	96	PR D53 4723	A. Gribushin <i>et al.</i>	(E672 and E706 Collab.)
HASAN	96	PL B388 376	A. Hasan, D.V. Bugg	(BRUN, LOQM)
BAI	95B	PL B355 374	J.Z. Bai et al.	(LOOM DNDL WASH)
	95	PL B353 378	D.V. Bugg et al.	(LOQM, PNPI, WASH)
	03B 92	PL D301 317 PR D47 772	A. Antonem et al. $T \wedge Armstrong at al.$	(FENICE COND.)
RARNES	930	PI B309 469	PD Barnes et al	(PS185 Collab.)
AUGUSTIN	92	PR D46 1951	IF Augustin G Cosme	(DM2 Collab.)
BOLTON	92	PL B278 495	T. Bolton <i>et al.</i>	(Mark III Collab.)
BOLTON	92B	PRL 69 1328	T. Bolton et al.	(Mark III Collab.)
COFFMAN	92	PRL 68 282	D.M. Coffman <i>et al.</i>	(Mark III Collab.)
HSUEH	92	PR D45 2181	S. Hsueh, S. Palestini	(FNAL, TORI)
AUGUSTIN	90	PR D42 10	J.E. Augustin <i>et al.</i>	(DM2 Collab.)
BAI	90B	PRL 65 1309	Z. Bai <i>et al.</i>	(Mark III Collab.)
BAI	90C	PRL 65 2507	Z. Bai et al.	(Mark III Collab.)
COEEMAN	90	PL B241 017 DR D41 1410	D. Biselio et al.	(DIVIZ COIIAD.)
	90	PR D/1 1380	L lousset et al	(Mark III Collab.)
ALEXANDER	89	NP B320 45	I P Alexander et al	(IBI MICH SLAC)
AUGUSTIN	89	NP B320 1	J.E. Augustin, G. Cosme	(DM2 Collab.)
BISELLO	89B	PR D39 701	G. Busetto <i>et al.</i>	(DM2 Collab.)
AUGUSTIN	88	PRL 60 2238	J.E. Augustin <i>et al.</i>	(DM2 Collab.)
COFFMAN	88	PR D38 2695	D.M. Coffman <i>et al.</i>	(Mark III Collab.)
FALVARD	88	PR D38 2706	A. Falvard <i>et al.</i>	(CLER, FRAS, LALO+)
AUGUSTIN	87	ZPHY C36 369	J.E. Augustin <i>et al.</i>	(LALO, CLER, FRAS+)
BAGLIN	87	NP B286 592	C. Baglin <i>et al.</i>	(LAPP, CERN, GENO, LYON+)
BALIRUSAII	. 87	PR D35 2077	R.M. Baltrusaitis <i>et al.</i>	(Mark III Collab.)
BISELLO	87	PI R102 230	D. Bisello et al.	$(PADO CLER ERAS_)$
COHEN	87	RMP 59 1121	E R Cohen B N Taylor	(RISC NBS)
HENRARD	87	NP B292 670	P. Henrard <i>et al.</i>	(CLER. FRAS. LALO+)
PALLIN	87	NP B292 653	D. Pallin et al.	(CLER, FRAS, LALO, PADO)
BALTRUSAIT	86B	PR D33 1222	R.M. Baltrusaitis <i>et al.</i>	(Mark III Collab.)
BALTRUSAIT	. 86D	PRL 56 107	R.M. Baltrusaitis	(CIT, UCSC, ILL, SLAC+)
BISELLO	86B	PL B179 294	D. Bisello <i>et al.</i>	(DM2 Collab.)
GAISER	86	PR D34 711	J. Gaiser <i>et al.</i>	(Crystal Ball Collab.)
BALTRUSAIT	. 85C	PRL 55 1723	R.M. Baltrusaitis <i>et al.</i>	(CIT, UCSC+)
BALIRUSAII	. 85D	PR D32 500	R.M. Baltrusaitis <i>et al.</i>	(CIT, UCSC+)
KUKAEV	60	Translated from YAE 41	733	(1000)
EATON	84	PR D29 804	M.W. Eaton <i>et al.</i>	(LBL, SLAC)
BLOOM	83	ARNS 33 143	E.D. Bloom, C. Peck	(SLAC, CIT)
EDWARDS	83B	PRL 51 859	C. Edwards et al.	(CIT, HARV, PRIN+)
FRANKLIN	83	PRL 51 963	M.E.B. Franklin et al.	(LBL, SLAC)
BURKE	82	PRL 49 632	D.L. Burke <i>et al.</i>	(LBL, SLAC)
EDWARDS	82B	PR D25 3065	C. Edwards <i>et al.</i>	(CIT, HARV, PRIN+)
EDWARDS	82D	MRL 48 458	C. Edwards et al.	(CII, HARV, PRIN+)
	82E	ANNO 33 143 PRI 10 250	C. Edwards at al	(CIT HARV DRIVE)
LDWAILDS	02L	IIL 49 239	C. Luwalus et al.	(CII, HARV, FRIN+)

LEMOIGNE	82	PL 113B 509	Y. Lemoigne <i>et al.</i>	(SACL, LOIC, SHMP+)
BESCH	81	ZPHY C8 I	H.J. Besch <i>et al.</i>	(BONN, DESY, MAINZ)
GIDAL	81	PL 107B 153	G. Gidal <i>et al.</i>	(SLAC, LBL)
PARTRIDGE	80	PRL 44 /12	R. Partridge <i>et al.</i>	(CII, HARV, PRIN+)
SCHARRE	80	PL 97B 329	D.L. Scharre <i>et al.</i>	(SLAC, LBL)
ZHOLENIZ	80	PL 96B 214	A.A. Zholents <i>et al.</i>	(NOVO)
Also		SJNP 34 814	A.A. Zholents <i>et al.</i>	(NOVO)
	700	Translated from YAF 34	14/1. D. Duan dalila at a/	
	79C	ZPHY CI 233	R. Brandelik <i>et al.</i>	(DASP Collab.)
ALEXANDER	78	PL 72B 493	G. Alexander <i>et al.</i>	(DESY, HAMB, SIEG+)
BESCH	78	PL 78B 347	H.J. Besch <i>et al.</i>	(BONN, DESY, MAINZ)
BRANDELIK	18B	PL 74B 292	R. Brandelik <i>et al.</i>	(DASP Collab.)
PERUZZI	78	PR D17 2901	I. Peruzzi <i>et al.</i>	(SLAC, LBL)
BARIEL	//	PL 66B 489	W. Bartel <i>et al.</i>	(DESY, HEIDP)
BURMESTER	//D	PL 72B 135	J. Burmester <i>et al.</i>	(DESY, HAMB, SIEG+)
FELDMAN	77	PRPL 33C 285	G.J. Feldman, M.L. Perl	(LBL, SLAC)
VANNUCCI	77	PR D15 1814	F. Vannucci <i>et al.</i>	(SLAC, LBL)
BARTEL	76	PL 64B 483	W. Bartel <i>et al.</i>	(DESY, HEIDP)
BRAUNSCH	76	PL 63B 487	W. Braunschweig <i>et al.</i>	(DASP Collab.)
JEAN-MARIE	76	PRL 36 291	B. Jean-Marie <i>et al.</i>	(SLAC, LBL) IG
BALDINI	75	PL 58B 471	R. Baldini-Celio <i>et al.</i>	(FRAS, ROMA)
BOYARSKI	75	PRL 34 1357	A.M. Boyarski <i>et al.</i>	(SLAC, LBL) JPC
DASP	75	PL 56B 491	W. Braunschweig <i>et al.</i>	(DASP Collab.)
ESPOSITO	75B	LNC 14 73	B. Esposito <i>et al.</i>	(FRAS, NAPL, PADO+)
FORD	75	PRL 34 604	R.L. Ford <i>et al.</i>	(SLAC, PENN)
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