$\chi_{c2}(1P)$

$I^G(J^{PC}) = 0^+(2^{++})$

See the Review on "Branching Ratios of $\psi(2S)$, $\chi_{c0,1,2}$ and $\eta_c(1S)$" before the $\chi_{c0}(1P)$ Listings.

$\chi_{c2}(1P)$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
3556.17 ± 0.07 OUR AVERAGE					
3557.3 ± 1.7 ±0.7	611	[1] AAIJ	17BB	LHCB	$pp \to b\overline{b}X \to 2(K^+K^-)X$
3556.10 ± 0.06 ±0.11	4.0k	[2] AAIJ	17BI	LHCB	$\chi_{c2} \to J/\psi\mu^+\mu^-$
3555.3 ± 0.6 ±2.2	2.5k	UEHARA	08	BELL	$\gamma\gamma \to$ hadrons
3555.70 ± 0.59 ±0.39		ABLIKIM	05G	BES2	$\psi(2S) \to \gamma\chi_{c2}$
3556.173± 0.123±0.020		ANDREOTTI	05A	E835	$p\overline{p} \to e^+e^-\gamma$
3559.9 ± 2.9		EISENSTEIN	01	CLE2	$e^+e^- \to e^+e^-\chi_{c2}$
3556.4 ± 0.7		BAI	99B	BES	$\psi(2S) \to \gamma X$
3556.22 ± 0.131±0.020	585	[3] ARMSTRONG	92	E760	$\overline{p}p \to e^+e^-\gamma$
3556.9 ± 0.4 ±0.5	50	BAGLIN	86B	SPEC	$\overline{p}p \to e^+e^-X$
3557.8 ± 0.2 ±4		[4] GAISER	86	CBAL	$\psi(2S) \to \gamma X$
3553.4 ± 2.2	66	[5] LEMOIGNE	82	GOLI	185 π^- Be $\to \gamma\mu^+\mu^-$ A
3555.9 ± 0.7		[6] OREGLIA	82	CBAL	$e^+e^- \to J/\psi 2\gamma$
3557 ± 1.5	69	[7] HIMEL	80	MRK2	$e^+e^- \to J/\psi 2\gamma$
3551 ±11	15	BRANDELIK	79B	DASP	$e^+e^- \to J/\psi 2\gamma$
3553 ± 4		[7] BARTEL	78B	CNTR	$e^+e^- \to J/\psi 2\gamma$
3553 ± 4 ±4		[7,8] TANENBAUM	78	MRK1	e^+e^-
3563 ± 7	360	[7] BIDDICK	77	CNTR	$e^+e^- \to \gamma X$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
3555.4 ± 1.3	53	UEHARA	13	BELL	$\gamma\gamma \to K^0_S K^0_S$
3543 ±10	4	WHITAKER	76	MRK1	$e^+e^- \to J/\psi 2\gamma$

[1] From a fit of the $\phi\phi$ invariant mass with the width of $\chi_{c2}(1P)$ fixed to the PDG 16 value.
[2] AAIJ 17BI reports also m(χ_{c2}) − m(χ_{c1}) = 45.39 ± 0.07 ± 0.03 MeV.
[3] Recalculated by ANDREOTTI 05A, using the value of $\psi(2S)$ mass from AULCHENKO 03.
[4] Using mass of $\psi(2S)$ = 3686.0 MeV.
[5] $J/\psi(1S)$ mass constrained to 3097 MeV.
[6] Assuming $\psi(2S)$ mass = 3686 MeV and $J/\psi(1S)$ mass = 3097 MeV.
[7] Mass value shifted by us by amount appropriate for $\psi(2S)$ mass = 3686 MeV and $J/\psi(1S)$ mass = 3097 MeV.
[8] From a simultaneous fit to radiative and hadronic decay channels.

$\chi_{c2}(1P)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
1.94 ±0.09 OUR FIT Error includes scale factor of 1.1.				
2.00 ±0.11 OUR AVERAGE				
2.10 ±0.20 ±0.02	4.0k	AAIJ 17BI	LHCB	$\chi_{c2} \to J/\psi \mu^+ \mu^-$
1.915±0.188±0.013		ANDREOTTI 05A	E835	$p\overline{p} \to e^+ e^- \gamma$
1.96 ±0.17 ±0.07	585	[1] ARMSTRONG 92	E760	$\overline{p} p \to e^+ e^- \gamma$
2.6 $^{+1.4}_{-1.0}$	50	BAGLIN 86B	SPEC	$\overline{p} p \to e^+ e^- X$
2.8 $^{+2.1}_{-2.0}$		[2] GAISER 86	CBAL	$\psi(2S) \to \gamma X$

[1] Recalculated by ANDREOTTI 05A.
[2] Errors correspond to 90% confidence level; authors give only width range.

$\chi_{c2}(1P)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)	Scale factor/ Confidence level
	Hadronic decays		
Γ_1	$2(\pi^+\pi^-)$	(1.11±0.07) %	S=1.2
Γ_2	$\rho\rho$		
Γ_3	$\pi^+\pi^-\pi^0\pi^0$	(1.81±0.23) %	
Γ_4	$\rho^+\pi^-\pi^0 +$ c.c.	(2.16±0.34) %	
Γ_5	$4\pi^0$	(1.10±0.15) $\times 10^{-3}$	
Γ_6	$K^+K^-\pi^0\pi^0$	(2.0 ±0.4) $\times 10^{-3}$	
Γ_7	$K^+\pi^-\overline{K}^0\pi^0 +$ c.c.	(1.37±0.19) %	
Γ_8	$\rho^-K^+\overline{K}^0 +$ c.c.	(4.1 ±1.2) $\times 10^{-3}$	
Γ_9	$K^*(892)^0 K^-\pi^+ \to K^-\pi^+K^0\pi^0 +$ c.c.	(2.9 ±0.8) $\times 10^{-3}$	
Γ_{10}	$K^*(892)^0\overline{K}^0\pi^0 \to K^+\pi^-\overline{K}^0\pi^0 +$ c.c.	(3.8 ±0.9) $\times 10^{-3}$	
Γ_{11}	$K^*(892)^- K^+\pi^0 \to K^+\pi^-\overline{K}^0\pi^0 +$ c.c.	(3.7 ±0.8) $\times 10^{-3}$	
Γ_{12}	$K^*(892)^+\overline{K}^0\pi^- \to K^+\pi^-\overline{K}^0\pi^0 +$ c.c.	(2.9 ±0.8) $\times 10^{-3}$	
Γ_{13}	$K^+K^-\eta\pi^0$	(1.3 ±0.4) $\times 10^{-3}$	
Γ_{14}	$K^+K^-\pi^+\pi^-$	(8.4 ±1.1) $\times 10^{-3}$	S=1.2
Γ_{15}	$K^+K^-\pi^+\pi^-\pi^0$	(1.06±0.11) %	
Γ_{16}	$K^0_S K^\pm\pi^\mp\pi^+\pi^-$	(6.6 ±0.7) $\times 10^{-3}$	
Γ_{17}	$K^+\overline{K}^*(892)^0\pi^- +$ c.c.	(2.1 ±1.1) $\times 10^{-3}$	
Γ_{18}	$K^*(892)^0\overline{K}^*(892)^0$	(2.3 ±0.9) $\times 10^{-3}$	S=2.1
Γ_{19}	$3(\pi^+\pi^-)$	(1.51±0.17) %	S=3.3
Γ_{20}	$\phi\phi$	(1.22±0.07) $\times 10^{-3}$	S=1.6
Γ_{21}	$\phi\phi\eta$	(5.3 ±0.6) $\times 10^{-4}$	
Γ_{22}	$\omega\omega$	(8.6 ±0.4) $\times 10^{-4}$	
Γ_{23}	ωK^+K^-	(6.6 ±0.8) $\times 10^{-4}$	

Γ_{24}	$\omega\phi$	$(9.8 \pm 1.3) \times 10^{-6}$	
Γ_{25}	$\pi\pi$	$(2.33 \pm 0.06) \times 10^{-3}$	S=1.2
Γ_{26}	$\rho^0\pi^+\pi^-$	$(3.9 \pm 1.6) \times 10^{-3}$	
Γ_{27}	$\pi^+\pi^-\pi^0$ (non-resonant)	$(2.0 \pm 0.4) \times 10^{-5}$	
Γ_{28}	$\rho(770)^{\pm}\pi^{\mp}$	$(6 \pm 4) \times 10^{-6}$	
Γ_{29}	$\pi^+\pi^-\eta$	$(4.7 \pm 1.3) \times 10^{-4}$	
Γ_{30}	$2\pi^+2\pi^-\eta$	$(5.7 \pm 0.6) \times 10^{-3}$	
Γ_{31}	$\pi^+\pi^-\eta'$	$(4.9 \pm 1.8) \times 10^{-4}$	
Γ_{32}	$\eta\eta$	$(5.4 \pm 0.4) \times 10^{-4}$	
Γ_{33}	K^+K^-	$(1.16 \pm 0.05) \times 10^{-3}$	S=1.7
Γ_{34}	$K^0_S K^0_S$	$(5.2 \pm 0.4) \times 10^{-4}$	
Γ_{35}	$K^*(892)^{\pm}K^{\mp}$	$(1.42 \pm 0.21) \times 10^{-4}$	
Γ_{36}	$K^*(892)^0\overline{K}^0$ + c.c.	$(1.23 \pm 0.27) \times 10^{-4}$	
Γ_{37}	$K^*_2(1430)^{\pm}K^{\mp}$	$(1.47 \pm 0.12) \times 10^{-3}$	
Γ_{38}	$K^*_2(1430)^0\overline{K}^0$ + c.c.	$(1.23 \pm 0.17) \times 10^{-3}$	
Γ_{39}	$K^*_3(1780)^{\pm}K^{\mp}$	$(5.1 \pm 0.8) \times 10^{-4}$	
Γ_{40}	$K^*_3(1780)^0\overline{K}^0$ + c.c.	$(5.6 \pm 2.1) \times 10^{-4}$	
Γ_{41}	$a_2(1320)^0\pi^0$	$(1.28 \pm 0.34) \times 10^{-3}$	
Γ_{42}	$a_2(1320)^{\pm}\pi^{\mp}$	$(1.7 \pm 0.6) \times 10^{-3}$	
Γ_{43}	$\overline{K}^0K^+\pi^-$ + c.c.	$(1.27 \pm 0.18) \times 10^{-3}$	
Γ_{44}	$K^+K^-\pi^0$	$(3.0 \pm 0.8) \times 10^{-4}$	
Γ_{45}	$K^+K^-\eta$	$< 3.2 \times 10^{-4}$	CL=90%
Γ_{46}	$K^+K^-\eta'(958)$	$(1.51 \pm 0.09) \times 10^{-4}$	
Γ_{47}	$\eta\eta'$	$(2.1 \pm 0.5) \times 10^{-5}$	
Γ_{48}	$\eta'\eta'$	$(4.5 \pm 0.6) \times 10^{-5}$	
Γ_{49}	$\eta\eta\eta'$	$(4.1 \pm 0.9) \times 10^{-5}$	
Γ_{50}	$\pi^+\pi^-K^0_S K^0_S$	$(2.2 \pm 0.5) \times 10^{-3}$	
Γ_{51}	$K^+K^-K^0_S K^0_S$	$< 4 \times 10^{-4}$	CL=90%
Γ_{52}	$K^0_S K^0_S K^0_S K^0_S$	$(1.12 \pm 0.18) \times 10^{-4}$	
Γ_{53}	$K^+K^-K^+K^-$	$(1.64 \pm 0.22) \times 10^{-3}$	S=1.1
Γ_{54}	$K^+K^-\phi$	$(1.41 \pm 0.29) \times 10^{-3}$	
Γ_{55}	$\overline{K}^0K^+\pi^-\phi$ + c.c.	$(4.8 \pm 0.7) \times 10^{-3}$	
Γ_{56}	$K^+K^-\pi^0\phi$	$(2.7 \pm 0.5) \times 10^{-3}$	
Γ_{57}	$K^0_S K^0_S K^0_S K^{\pm}\pi^{\mp}$	$(1.70 \pm 0.16) \times 10^{-4}$	
Γ_{58}	$3(K^+K^-)$	$(7.1 \pm 1.4) \times 10^{-6}$	
Γ_{59}	$\phi\pi^+\pi^-\pi^0$	$(8.4 \pm 1.0) \times 10^{-4}$	
Γ_{60}	$p\overline{p}$	$(8.06 \pm 0.33) \times 10^{-5}$	S=1.6
Γ_{61}	$p\overline{p}\pi^0$	$(4.6 \pm 0.4) \times 10^{-4}$	
Γ_{62}	$p\overline{p}\eta$	$(1.72 \pm 0.25) \times 10^{-4}$	
Γ_{63}	$p\overline{p}\omega$	$(3.6 \pm 0.4) \times 10^{-4}$	
Γ_{64}	$p\overline{p}\pi^+\pi^-$	$(1.32 \pm 0.34) \times 10^{-3}$	
Γ_{65}	$p\overline{p}\pi^0\pi^0$	$(7.8 \pm 2.3) \times 10^{-4}$	
Γ_{66}	$p\overline{p}\eta\pi^0$	$(1.29 \pm 0.09) \times 10^{-4}$	

Γ_{67}	$p\overline{p}\eta\eta$	$(2.6 \pm 0.5) \times 10^{-5}$	
Γ_{68}	$p\overline{p}K^+K^-$	$(2.52\pm 0.17) \times 10^{-4}$	
Γ_{69}	$p\overline{p}K^+K^-$ (non-resonant)	$(1.89\pm 0.32) \times 10^{-4}$	
Γ_{70}	$K^+\overline{p}\Lambda(1520)+$ c.c.	$(2.8 \pm 0.7) \times 10^{-4}$	
Γ_{71}	$\Lambda(1520)\overline{\Lambda}(1520)$	$(4.6 \pm 1.4) \times 10^{-4}$	
Γ_{72}	$p\overline{p}\phi$	$(2.8 \pm 0.9) \times 10^{-5}$	
Γ_{73}	$p\overline{p}K^0_S K^0_S$	$< 8 \times 10^{-4}$	CL=90%
Γ_{74}	$p\overline{p}K^0_S K^-\pi^+ +$ c.c.	$(5.6 \pm 0.5) \times 10^{-5}$	
Γ_{75}	$p\overline{n}\pi^-$	$(8.4 \pm 0.9) \times 10^{-4}$	
Γ_{76}	$\overline{p}n\pi^+$	$(8.8 \pm 0.8) \times 10^{-4}$	
Γ_{77}	$p\overline{n}\pi^-\pi^0$	$(2.15\pm 0.18) \times 10^{-3}$	
Γ_{78}	$\overline{p}n\pi^+\pi^0$	$(2.09\pm 0.18) \times 10^{-3}$	
Γ_{79}	$\Lambda\overline{\Lambda}$	$(1.81\pm 0.16) \times 10^{-4}$	
Γ_{80}	$\Lambda\overline{\Lambda}\pi^+\pi^-$	$(1.24\pm 0.15) \times 10^{-3}$	
Γ_{81}	$\Lambda\overline{\Lambda}\pi^+\pi^-$ (non-resonant)	$(6.5 \pm 1.5) \times 10^{-4}$	
Γ_{82}	$\Sigma(1385)^+\overline{\Lambda}\pi^- +$ c.c.	$< 4 \times 10^{-4}$	CL=90%
Γ_{83}	$\Sigma(1385)^-\overline{\Lambda}\pi^+ +$ c.c.	$< 6 \times 10^{-4}$	CL=90%
Γ_{84}	$\Lambda\overline{\Lambda}\eta$	$(1.04\pm 0.25) \times 10^{-4}$	
Γ_{85}	$\Lambda\overline{\Lambda}\eta'$	$(3.0 \pm 0.7) \times 10^{-5}$	
Γ_{86}	$\Lambda\overline{\Lambda}\omega$	$(1.38\pm 0.21) \times 10^{-4}$	
Γ_{87}	$\Lambda\overline{\Lambda}\phi$	$(7.1 \pm 0.9) \times 10^{-5}$	
Γ_{88}	$K^+\overline{p}\Lambda +$ c.c.	$(7.7 \pm 0.5) \times 10^{-4}$	
Γ_{89}	$nK^0_S\overline{\Lambda} +$ c.c.	$(3.54\pm 0.28) \times 10^{-4}$	
Γ_{90}	$K^*(892)^+\overline{p}\Lambda+$ c.c.	$(8.1 \pm 1.1) \times 10^{-4}$	
Γ_{91}	$\overline{p}\Lambda(1520)K^0_S\pi^+ +$ c.c.	$(4.0 \pm 0.9) \times 10^{-5}$	
Γ_{92}	$\Sigma^0\overline{\Sigma}^0$	$(3.6 \pm 0.6) \times 10^{-5}$	
Γ_{93}	$\Sigma^+\overline{p}K^0_S +$ c.c.	$(8.2 \pm 0.9) \times 10^{-5}$	
Γ_{94}	$\Sigma^0\overline{p}K^+ +$ c.c.	$(9.0 \pm 0.8) \times 10^{-5}$	
Γ_{95}	$\Sigma^+\overline{\Sigma}^-$	$(3.3 \pm 0.7) \times 10^{-5}$	
Γ_{96}	$\Sigma^+\overline{\Sigma}^-\eta$	$(5.4 \pm 1.3) \times 10^{-5}$	
Γ_{97}	$\Sigma^-\overline{\Sigma}^+$	$(4.4 \pm 1.8) \times 10^{-5}$	
Γ_{98}	$\Sigma(1385)^+\overline{\Sigma}(1385)^-$	$< 1.5 \times 10^{-4}$	CL=90%
Γ_{99}	$\Sigma(1385)^-\overline{\Sigma}(1385)^+$	$< 8 \times 10^{-5}$	CL=90%
Γ_{100}	$K^-\Lambda\overline{\Xi}^+ +$ c.c.	$(1.75\pm 0.31) \times 10^{-4}$	
Γ_{101}	$\Xi^0\overline{\Xi}^0$	$(1.81\pm 0.22) \times 10^{-4}$	
Γ_{102}	$\Xi^-\overline{\Xi}^+$	$(1.42\pm 0.12) \times 10^{-4}$	
Γ_{103}	$\Omega^-\overline{\Omega}^+$	$(4.47\pm 0.30) \times 10^{-5}$	
Γ_{104}	$J/\psi(1S)\pi^+\pi^-\pi^0$	< 1.5 %	CL=90%
Γ_{105}	$\pi^0\eta_c$	$< 3.2 \times 10^{-3}$	CL=90%
Γ_{106}	$\eta_c(1S)\pi^+\pi^-$	$< 5 \times 10^{-3}$	CL=90%

Radiative decays

Γ_{107}	$\gamma J/\psi(1S)$	(19.0 ± 0.8) %	S=1.5
Γ_{108}	$\gamma\rho^0$	$< 1.9 \times 10^{-5}$	CL=90%

Γ_{109}	$\gamma\omega$	$<$ 6	$\times 10^{-6}$	CL=90%
Γ_{110}	$\gamma\phi$	$<$ 7	$\times 10^{-6}$	CL=90%
Γ_{111}	$\gamma\gamma$	(2.88$\pm$0.10)	$\times 10^{-4}$	S=1.1
Γ_{112}	$e^+e^- J/\psi(1S)$	(2.14$\pm$0.15)	$\times 10^{-3}$	
Γ_{113}	$\mu^+\mu^- J/\psi(1S)$	(2.01$\pm$0.33)	$\times 10^{-4}$	

CONSTRAINED FIT INFORMATION

A multiparticle fit to $\chi_{c1}(1P)$, $\chi_{c0}(1P)$, $\chi_{c2}(1P)$, and $\psi(2S)$ with 4 total widths, a partial width, 27 combinations of partial widths obtained from integrated cross section, and 87 branching ratios uses 263 measurements to determine 50 parameters. The overall fit has a $\chi^2 = 435.4$ for 213 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients $\left\langle\delta p_i \delta p_j\right\rangle/(\delta p_i{\cdot}\delta p_j)$, in percent, from the fit to parameters p_i, including the branching fractions, $x_i \equiv \Gamma_i/\Gamma_{\rm total}$.

	x_1	x_{14}	x_{17}	x_{18}	x_{20}	x_{25}	x_{26}	x_{32}	x_{33}	x_{34}
x_{14}	5									
x_{17}	1	26								
x_{18}	2	2	0							
x_{20}	14	5	1	2						
x_{25}	30	6	1	3	31					
x_{26}	11	1	0	0	2	4				
x_{32}	10	2	0	1	10	24	1			
x_{33}	18	4	1	2	18	42	2	14		
x_{34}	11	3	1	1	11	24	1	8	14	
x_{43}	6	1	0	1	6	13	1	4	8	4
x_{53}	6	3	1	1	7	13	1	4	8	5
x_{60}	17	6	2	2	17	36	2	12	21	13
x_{79}	10	2	0	1	10	23	1	8	14	8
x_{107}	19	10	3	3	19	37	3	12	22	14
x_{111}	14	−7	−2	−1	14	43	1	15	25	13
Γ	−25	−19	−5	−5	−26	−43	−4	−15	−26	−18

	x_{43}	x_{53}	x_{60}	x_{79}	x_{107}	x_{111}
x_{53}	2					
x_{60}	7	8				
x_{79}	4	4	11			
x_{107}	7	9	3	12		
x_{111}	7	5	28	14	22	
Γ	−8	−12	−41	−14	−49	−46

$\chi_{c2}(1P)$ PARTIAL WIDTHS

$\chi_{c2}(1P)$ $\Gamma(i)\Gamma(\gamma J/\psi(1S))/\Gamma(\text{total})$

$\Gamma(p\overline{p}) \times \Gamma(\gamma J/\psi(1S))/\Gamma_{\text{total}}$ — $\Gamma_{60}\Gamma_{107}/\Gamma$

VALUE (eV)	DOCUMENT ID		TECN	COMMENT
29.6±1.3 OUR FIT Error includes scale factor of 1.3.				
27.5±1.5 OUR AVERAGE				
27.0±1.5±1.1	[1] ANDREOTTI	05A	E835	$p\overline{p} \to e^+e^-\gamma$
27.7±1.5±2.0	[1,2] ARMSTRONG	92	E760	$\overline{p}p \to e^+e^-\gamma$
36 ±8	[1] BAGLIN	86B	SPEC	$\overline{p}p \to e^+e^-X$

[1] Calculated by us using $B(J/\psi(1S) \to e^+e^-) = 0.0593 \pm 0.0010$.
[2] Recalculated by ANDREOTTI 05A.

$\Gamma(\gamma\gamma) \times \Gamma(\gamma J/\psi(1S))/\Gamma_{\text{total}}$ — $\Gamma_{111}\Gamma_{107}/\Gamma$

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
106 ± 5 OUR FIT Error includes scale factor of 1.4.					
123 ± 6 OUR AVERAGE					
124.1± 2.5± 5.9	4960	[1] SEINO	23	BELL	$e^+e^- \to e^+e^-\chi_{c2}$
111 ± 12 ± 9	147	[2] DOBBS	06	CLE3	$e^+e^- \to e^+e^-\chi_{c2}$
139 ± 55 ± 21		[2,3] ACCIARRI	99E	L3	$e^+e^- \to e^+e^-\chi_{c2}$
242 ± 65 ± 51		[2,4] ACKER..,K...	98	OPAL	$e^+e^- \to e^+e^-\chi_{c2}$
150 ± 42 ± 36		[2,5] DOMINICK	94	CLE2	$e^+e^- \to e^+e^-\chi_{c2}$
470 ±240 ±120		[2,6] BAUER	93	TPC	$e^+e^- \to e^+e^-\chi_{c2}$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
114 ± 11 ± 9	136	[2,7] ABE	02T	BELL	$e^+e^- \to e^+e^-\chi_{c2}$

[1] Calculated from the measured $\Gamma_{\gamma\gamma} \times B(\chi_{c2}(1S) \to \gamma J/\psi(1S)) \times B(J/\psi(1S) \to \ell^+\ell^-) = 14.8 \pm 0.3 \pm 0.7$ eV, using $B(J/\psi(1S) \to \ell^+\ell^-) = 11.93 \pm 0.05\%$.
[2] Calculated by us using $B(J/\psi \to \ell^+\ell^-) = 0.1187 \pm 0.0008$.
[3] The value for $\Gamma(\chi_{c2} \to \gamma\gamma)$ reported in ACCIARRI 99E is derived using $B(\chi_{c2} \to \gamma J/\psi(1S)) \times B(J/\psi(1S) \to \ell^+\ell^-) = 0.0162 \pm 0.0014$.
[4] The value for $\Gamma(\chi_{c2} \to \gamma\gamma)$ reported in ACKERSTAFF,K 98 is derived using $B(\chi_{c2} \to \gamma J/\psi(1S)) = 0.135 \pm 0.011$ and $B(J/\psi(1S) \to \ell^+\ell^-) = 0.1203 \pm 0.0038$.
[5] The value for $\Gamma(\chi_{c2} \to \gamma\gamma)$ reported in DOMINICK 94 is derived using $B(\chi_{c2} \to \gamma J/\psi(1S))= 0.135 \pm 0.011$, $B(J/\psi(1S) \to e^+e^-) = 0.0627 \pm 0.0020$, and $B(J/\psi(1S) \to \mu^+\mu^-) = 0.0597 \pm 0.0025$.
[6] The value for $\Gamma(\chi_{c2} \to \gamma\gamma)$ reported in BAUER 93 is derived using $B(\chi_{c2} \to \gamma J/\psi(1S))= 0.135 \pm 0.011$, $B(J/\psi(1S) \to e^+e^-) = 0.0627 \pm 0.0020$, and $B(J/\psi(1S) \to \mu^+\mu^-) = 0.0597 \pm 0.0025$.
[7] All systematic errors added in quadrature. Superseded by SEINO 23.

$\chi_{c2}(1P)$ $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$

$\Gamma(2(\pi^+\pi^-)) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ — $\Gamma_1\Gamma_{111}/\Gamma$

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
6.2 ±0.4 OUR FIT Error includes scale factor of 1.3.					
5.2 ±0.7 OUR AVERAGE					
5.01±0.44±0.55	1597±138	UEHARA	08	BELL	$\gamma\gamma \to \chi_{c2} \to 2(\pi^+\pi^-)$
6.4 ±1.8 ±0.8		EISENSTEIN	01	CLE2	$e^+e^- \to e^+e^-\chi_{c2}$

$\Gamma(\rho\rho) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_2\Gamma_{111}/\Gamma$

VALUE (eV)	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<7.8	90	<598	UEHARA	08	BELL	$\gamma\gamma \to \chi_{c2} \to 2(\pi^+\pi^-)$

$\Gamma(K^+K^-\pi^+\pi^-) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_{14}\Gamma_{111}/\Gamma$

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
4.7 ±0.6 OUR FIT Error includes scale factor of 1.2.					
4.42±0.42±0.53	780 ± 74	UEHARA	08	BELL	$\gamma\gamma \to \chi_{c2} \to K^+K^-\pi^+\pi^-$

$\Gamma(K^+K^-\pi^+\pi^-\pi^0) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_{15}\Gamma_{111}/\Gamma$

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
6.5±0.9±1.5	1250	DEL-AMO-SA..	11M	BABR	$\gamma\gamma \to K^+K^-\pi^+\pi^-\pi^0$

$\Gamma(K^*(892)^0\overline{K}^*(892)^0) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_{18}\Gamma_{111}/\Gamma$

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
1.3±0.5 OUR FIT Error includes scale factor of 2.1.					
0.8±0.17±0.27	151 ± 30	UEHARA	08	BELL	$\gamma\gamma \to \chi_{c2} \to K^+K^-\pi^+\pi^-$

$\Gamma(\phi\phi) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_{20}\Gamma_{111}/\Gamma$

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
0.68±0.04 OUR FIT Error includes scale factor of 1.5.					
0.62±0.07±0.05	89 ± 11	[1] LIU	12B	BELL	$\gamma\gamma \to 2(K^+K^-)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.58±0.18±0.16	26.5 ± 8.1	UEHARA	08	BELL	$\gamma\gamma \to \chi_{c2} \to 2(K^+K^-)$

[1] Supersedes UEHARA 08. Using B($\phi \to K^+K^-$) = (48.9 ± 0.5)%.

$\Gamma(\omega\omega) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_{22}\Gamma_{111}/\Gamma$

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.64	90	[1] LIU	12B	BELL	$\gamma\gamma \to 2(\pi^+\pi^-\pi^0)$

[1] Using B($\omega \to \pi^+\pi^-\pi^0$) = (89.2 ± 0.7)%.

$\Gamma(\omega\phi) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_{24}\Gamma_{111}/\Gamma$

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.04	90	[1] LIU	12B	BELL	$\gamma\gamma \to K^+K^-\pi^+\pi^-\pi^0$

[1] Using B($\phi \to K^+K^-$) = (48.9 ± 0.5)% and B($\omega \to \pi^+\pi^-\pi^0$) = (89.2 ± 0.7)%.

$\Gamma(\pi\pi) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_{25}\Gamma_{111}/\Gamma$

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
1.30±0.06 OUR FIT Error includes scale factor of 1.3.					
1.18±0.25 OUR AVERAGE					
1.44±0.54±0.47	34 ± 13	[1] UEHARA	09	BELL	10.6 $e^+e^- \to e^+e^-\pi^0\pi^0$
1.14±0.21±0.17	54 ± 10	[2] NAKAZAWA	05	BELL	10.6 $e^+e^- \to e^+e^-\pi^+\pi^-$

[1] We multiplied the measurement by 3 to convert from $\pi^0\pi^0$ to $\pi\pi$. Interference with the continuum included.
[2] We have multiplied $\pi^+\pi^-$ measurement by 3/2 to obtain $\pi\pi$.

$\Gamma(\rho^0\pi^+\pi^-) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_{26}\Gamma_{111}/\Gamma$

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
2.2±0.9 OUR FIT					
3.2±1.9±0.5	986 ± 578	UEHARA	08	BELL	$\gamma\gamma \to \chi_{c2} \to 2(\pi^+\pi^-)$

$\Gamma(\eta\eta) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_{32}\Gamma_{111}/\Gamma$

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
0.53±0.22±0.09	8	[1] UEHARA	10A	BELL	10.6 $e^+e^- \to e^+e^-\eta\eta$

[1] Interference with the continuum not included.

$\Gamma(K^+K^-) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_{33}\Gamma_{111}/\Gamma$

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
0.65±0.04 OUR FIT Error includes scale factor of 1.6.					
0.44±0.11±0.07	33 ± 8	NAKAZAWA	05	BELL	10.6 $e^+e^- \to e^+e^-K^+K^-$

$\Gamma(K^0_S K^0_S) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_{34}\Gamma_{111}/\Gamma$

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
0.290±0.024 OUR FIT					
0.27 $^{+0.07}_{-0.06}$ ±0.03	53	[1] UEHARA	13	BELL	$\gamma\gamma \to K^0_S K^0_S$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.31 ±0.05 ±0.03	38 ± 7	CHEN	07B	BELL	$e^+e^- \to e^+e^-\chi_{c2}$

[1] Supersedes CHEN 07B.

$\Gamma(\overline{K}^0 K^+\pi^- + c.c.) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_{43}\Gamma_{111}/\Gamma$

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
0.71±0.11 OUR FIT					
1.20±0.33±0.13	126	[1] DEL-AMO-SA...11M		BABR	$\gamma\gamma \to K^0_S K^\pm\pi^\mp$

[1] We have multiplied $\overline{K}K\pi$ by 2/3 to obtain $\overline{K}^0K^+\pi^-$ + c.c.

$\Gamma(K^+K^-K^+K^-) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_{53}\Gamma_{111}/\Gamma$

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
0.92±0.13 OUR FIT Error includes scale factor of 1.1.					
1.10±0.21±0.15	126 ± 24	UEHARA	08	BELL	$\gamma\gamma \to \chi_{c2} \to 2(K^+K^-)$

$\Gamma(\eta_c(1S)\pi^+\pi^-) \times \Gamma(\gamma\gamma)/\Gamma_{total}$ — $\Gamma_{106}\Gamma_{111}/\Gamma$

VALUE (eV)	CL%	DOCUMENT ID		TECN	COMMENT
<15.7	90	LEES	12AE	BABR	$e^+e^- \to e^+e^-\pi^+\pi^-\eta_c$

$\chi_{c2}(1P)$ BRANCHING RATIOS

HADRONIC DECAYS

$\Gamma(2(\pi^+\pi^-))/\Gamma_{total}$ — Γ_1/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.11±0.07 OUR FIT Error includes scale factor of 1.2.					
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.14±0.06±0.03	1042k	[1,2] ABLIKIM	24BT	BES3	$\psi(2S) \to \gamma\chi_{c2}$

[1] ABLIKIM 24BT reports $1.153 \pm 0.001 \pm 0.063$ % from a measurement of [$\Gamma(\chi_{c2}(1P) \to 2(\pi^+\pi^-))/\Gamma_{total}$] × [B($\psi(2S) \to \gamma\chi_{c2}(1P)$)] assuming B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(9.52 \pm 0.20) \times 10^{-2}$, which we rescale to our best (shown rounded) value B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] Not used since the same experimental measurement has been used in another related quantity included elsewhere in the fit.

$\Gamma(\pi^+\pi^-\pi^0\pi^0)/\Gamma_{total}$ Γ_3/Γ

VALUE (%)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
1.81±0.23±0.04	903.5	[1] HE	08B	CLEO	$e^+e^- \to \gamma h^+h^-h^0h^0$

[1] HE 08B reports $1.87 \pm 0.07 \pm 0.22 \pm 0.13$ % from a measurement of [$\Gamma(\chi_{c2}(1P) \to \pi^+\pi^-\pi^0\pi^0)/\Gamma_{total}$] × [B($\psi(2S) \to \gamma\chi_{c2}(1P)$)] assuming B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\rho^+\pi^-\pi^0 + \text{c.c.})/\Gamma_{total}$ Γ_4/Γ

VALUE (%)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
2.16±0.33±0.05	1031.9	[1,2] HE	08B	CLEO	$e^+e^- \to \gamma h^+h^-h^0h^0$

[1] HE 08B reports $2.23 \pm 0.11 \pm 0.32 \pm 0.16$ % from a measurement of [$\Gamma(\chi_{c2}(1P) \to \rho^+\pi^-\pi^0 +$ c.c.$)/\Gamma_{total}$] × [B($\psi(2S) \to \gamma\chi_{c2}(1P)$)] assuming B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] Calculated by us. We have added the values from HE 08B for $\rho^+\pi^-\pi^0$ and $\rho^-\pi^+\pi^0$ decays assuming uncorrelated statistical and fully correlated systematic uncertainties.

$\Gamma(4\pi^0)/\Gamma_{total}$ Γ_5/Γ

VALUE (units 10^{-3})	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
1.10±0.15±0.03	1164	[1] ABLIKIM	11A	BES3	$e^+e^- \to \psi(2S) \to \gamma\chi_{c2}$

[1] ABLIKIM 11A reports $(1.21 \pm 0.05 \pm 0.16) \times 10^{-3}$ from a measurement of [$\Gamma(\chi_{c2}(1P) \to 4\pi^0)/\Gamma_{total}$] × [B($\psi(2S) \to \gamma\chi_{c2}(1P)$)] assuming B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(8.74 \pm 0.35) \times 10^{-2}$, which we rescale to our best (shown rounded) value B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^+K^-\pi^0\pi^0)/\Gamma_{total}$ Γ_6/Γ

VALUE (%)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
0.204±0.040±0.005	76.9	[1] HE	08B	CLEO	$e^+e^- \to \gamma h^+h^-h^0h^0$

[1] HE 08B reports $0.21 \pm 0.03 \pm 0.03 \pm 0.01$ % from a measurement of [$\Gamma(\chi_{c2}(1P) \to K^+K^-\pi^0\pi^0)/\Gamma_{total}$] × [B($\psi(2S) \to \gamma\chi_{c2}(1P)$)] assuming B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^+\pi^-\overline{K}^0\pi^0 + \text{c.c.})/\Gamma_{\text{total}}$ Γ_7/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.37±0.19±0.03	211.6	[1] HE	08B	CLEO	$e^+e^- \to \gamma h^+ h^- h^0 h^0$

[1] HE 08B reports $1.41 \pm 0.11 \pm 0.16 \pm 0.10$ % from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^+\pi^-\overline{K}^0\pi^0 + \text{c.c.})/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\rho^- K^+\overline{K}^0 + \text{c.c.})/\Gamma_{\text{total}}$ Γ_8/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.41±0.12±0.01	62.9	[1] HE	08B	CLEO	$e^+e^- \to \gamma h^+ h^- h^0 h^0$

[1] HE 08B reports $0.42 \pm 0.11 \pm 0.06 \pm 0.03$ % from a measurement of $[\Gamma(\chi_{c2}(1P) \to \rho^- K^+\overline{K}^0 + \text{c.c.})/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^*(892)^0 K^-\pi^+ \to K^-\pi^+K^0\pi^0 + \text{c.c.})/\Gamma_{\text{total}}$ Γ_9/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.29±0.08±0.01	38.7	[1] HE	08B	CLEO	$e^+e^- \to \gamma h^+ h^- h^0 h^0$

[1] HE 08B reports $0.30 \pm 0.07 \pm 0.04 \pm 0.02$ % from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^*(892)^0 K^-\pi^+ \to K^-\pi^+K^0\pi^0 + \text{c.c.})/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^*(892)^0\overline{K}^0\pi^0 \to K^+\pi^-\overline{K}^0\pi^0 + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{10}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.38±0.08±0.01	63.0	[1] HE	08B	CLEO	$e^+e^- \to \gamma h^+ h^- h^0 h^0$

[1] HE 08B reports $0.39 \pm 0.07 \pm 0.05 \pm 0.03$ % from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^*(892)^0\overline{K}^0\pi^0 \to K^+\pi^-\overline{K}^0\pi^0 + \text{c.c.})/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^*(892)^- K^+\pi^0 \to K^+\pi^-\overline{K}^0\pi^0 + \text{c.c.})/\Gamma_{\text{total}}$ Γ_{11}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.37±0.08±0.01	51.1	[1] HE	08B	CLEO	$e^+e^- \to \gamma h^+ h^- h^0 h^0$

[1] HE 08B reports $0.38 \pm 0.07 \pm 0.04 \pm 0.03$ % from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^*(892)^- K^+\pi^0 \to K^+\pi^-\overline{K}^0\pi^0 + \text{c.c.})/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^*(892)^+ \overline{K}^0 \pi^- \to K^+ \pi^- \overline{K}^0 \pi^0 + \text{c.c.})/\Gamma_{total}$ Γ_{12}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.29±0.08±0.01	39.3	[1] HE	08B	CLEO	$e^+ e^- \to \gamma h^+ h^- h^0 h^0$

[1] HE 08B reports $0.30 \pm 0.07 \pm 0.04 \pm 0.02$ % from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^*(892)^+ \overline{K}^0 \pi^- \to K^+ \pi^- \overline{K}^0 \pi^0 + \text{c.c.})/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^+ K^- \eta \pi^0)/\Gamma_{total}$ Γ_{13}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.126±0.044±0.003	22.9	[1] HE	08B	CLEO	$e^+ e^- \to \gamma h^+ h^- h^0 h^0$

[1] HE 08B reports $0.13 \pm 0.04 \pm 0.02 \pm 0.01$ % from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^+ K^- \eta \pi^0)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^+ K^- \pi^+ \pi^- \pi^0)/\Gamma_{total}$ Γ_{15}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
10.6±1.1±0.3	11k	[1] ABLIKIM	13B	BES3	$e^+ e^- \to \psi(2S) \to \gamma \chi_{c2}$

[1] ABLIKIM 13B reports $(11.69 \pm 0.13 \pm 1.31) \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^+ K^- \pi^+ \pi^- \pi^0)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (8.72 \pm 0.34) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^0_S K^\pm \pi^\mp \pi^+ \pi^-)/\Gamma_{total}$ Γ_{16}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
6.6±0.6±0.2	4.5k	[1] ABLIKIM	13B	BES3	$e^+ e^- \to \psi(2S) \to \gamma \chi_{c2}$

[1] ABLIKIM 13B reports $(7.30 \pm 0.11 \pm 0.75) \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^0_S K^\pm \pi^\mp \pi^+ \pi^-)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (8.72 \pm 0.34) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^+ \overline{K}^*(892)^0 \pi^- + \text{c.c.})/\Gamma(K^+ K^- \pi^+ \pi^-)$ Γ_{17}/Γ_{14}

VALUE	DOCUMENT ID		TECN	COMMENT
0.25±0.13 OUR FIT				
0.25±0.13	TANENBAUM	78	MRK1	$\psi(2S) \to \gamma \chi_{c2}$

$\Gamma(3(\pi^+ \pi^-))/\Gamma_{total}$ Γ_{19}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
15.1±1.7 OUR AVERAGE Error includes scale factor of 3.3.					
15.5±0.3±0.4	112k	[1] ABLIKIM	22Q	BES3	$\psi(2S) \to \gamma 3(\pi^+ \pi^-)$

7.3±1.7±0.2	112	[2] BAI	99B	BES	$\psi(2S) \to \gamma\chi_{c2}$
9.3±6.2±0.2	23	[3] TANENBAUM	78	MRK1	$\psi(2S) \to \gamma\chi_{c2}$

[1] ABLIKIM 22Q reports $(1.565 \pm 0.005 \pm 0.048) \times 10^{-2}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to 3(\pi^+\pi^-))/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.52 \pm 0.20) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] BAI 99B reports $(9.0 \pm 1.0 \pm 2.0) \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to 3(\pi^+\pi^-))/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (7.8 \pm 0.8) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[3] TANENBAUM 78 reports $[\Gamma(\chi_{c2}(1P) \to 3(\pi^+\pi^-))/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))] = (0.9 \pm 0.6) \times 10^{-3}$ which we divide by our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\phi\phi)/\Gamma_{total}$ Γ_{20}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.22 ±0.07 OUR FIT	Error includes scale factor of 1.6.				
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.253±0.034±0.030	4247	[1,2] ABLIKIM	23N	BES3	$\psi(2S) \to \gamma$ hadrons

[1] ABLIKIM 23N reports $(12.67 \pm 0.28 \pm 0.33) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \phi\phi)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.52 \pm 0.20) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] Not used since the same experimental measurement has been used in another related quantity included elsewhere in the fit.

$\Gamma(\phi\phi\eta)/\Gamma_{total}$ Γ_{21}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
5.3±0.6±0.1	143.6	[1] ABLIKIM	20B	BES3	$\psi(2S) \to \gamma\phi\phi\eta$

[1] ABLIKIM 20B reports $(5.33 \pm 0.52 \pm 0.39) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \phi\phi\eta)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.52 \pm 0.20) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\omega\omega)/\Gamma_{total}$ Γ_{22}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
0.86±0.04 OUR AVERAGE					
0.87±0.04±0.02	14.3k	[1] ABLIKIM	25K	BES3	$\psi(2S) \to \gamma 2(\pi^+\pi^-\pi^0)$
0.81±0.10±0.02	762	[2] ABLIKIM	11K	BES3	$\psi(2S) \to \gamma$ hadrons
1.71±0.57±0.04	27.7 ± 7.4	[3] ABLIKIM	05N	BES2	$\psi(2S) \to \gamma\chi_{c2} \to \gamma 6\pi$

[1] ABLIKIM 25K reports $(8.75 \pm 0.08 \pm 0.42) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \omega\omega)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.52 \pm 0.20) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] ABLIKIM 11K reports $(8.9 \pm 0.3 \pm 1.1) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \omega\omega)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.74 \pm 0.35) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[3] ABLIKIM 05N reports $[\Gamma(\chi_{c2}(1P) \to \omega\omega)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))] = (0.165 \pm 0.044 \pm 0.032) \times 10^{-3}$ which we divide by our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\omega K^+ K^-)/\Gamma_{\text{total}}$ — Γ_{23}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
0.66±0.08±0.02	512	[1] ABLIKIM	13B	BES3	$e^+e^- \to \psi(2S) \to \gamma\chi_{c2}$

[1] ABLIKIM 13B reports $(0.73 \pm 0.04 \pm 0.08) \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \omega K^+ K^-)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.72 \pm 0.34) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\omega\phi)/\Gamma_{\text{total}}$ — Γ_{24}/Γ

VALUE (units 10^{-6})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
9.8±1.3 OUR AVERAGE						
9.9±1.4±0.2		151	[1] ABLIKIM	25K	BES3	$\psi(2S) \to \gamma\pi^+\pi^-\pi^0 K^+ K^-$
9.5±2.7±0.2		33	[2] ABLIKIM	19J	BES3	$\psi(2S) \to \gamma$ hadrons
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<18	90		[3,4] ABLIKIM	11K	BES3	$\psi(2S) \to \gamma$ hadrons

[1] ABLIKIM 25K reports $(0.10 \pm 0.01 \pm 0.01) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \omega\phi)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.52 \pm 0.20) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] ABLIKIM 19J reports $[\Gamma(\chi_{c2}(1P) \to \omega\phi)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))] = (0.91 \pm 0.23 \pm 0.12) \times 10^{-6}$ which we divide by our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[3] ABLIKIM 11K reports $< 2 \times 10^{-5}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \omega\phi)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.74 \pm 0.35) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

[4] Superseded by ABLIKIM 19J.

$\Gamma(\rho^0\pi^+\pi^-)/\Gamma(2(\pi^+\pi^-))$ — Γ_{26}/Γ_1

VALUE	DOCUMENT ID	TECN	COMMENT
0.36±0.15 OUR FIT			
0.31±0.17	TANENBAUM 78	MRK1	$\psi(2S) \to \gamma\chi_{c2}$

$\Gamma(\pi^+\pi^-\pi^0(\text{non-resonant}))/\Gamma_{\text{total}}$ — Γ_{27}/Γ

VALUE (units 10^{-5})	EVTS	DOCUMENT ID	TECN	COMMENT
1.99±0.42±0.05	64	[1] ABLIKIM 17AG	BES3	$\psi(2S) \to \gamma\pi^+\pi^-\pi^0$

[1] ABLIKIM 17AG reports $(2.1 \pm 0.4 \pm 0.2) \times 10^{-5}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \pi^+\pi^-\pi^0(\text{non-resonant}))/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\rho(770)^\pm\pi^\mp)/\Gamma_{\text{total}}$ — Γ_{28}/Γ

VALUE (units 10^{-5})	EVTS	DOCUMENT ID	TECN	COMMENT
0.61±0.37±0.01	15	[1] ABLIKIM 17AG	BES3	$\psi(2S) \to \gamma\pi^+\pi^-\pi^0$

[1] ABLIKIM 17AG reports $(0.64 \pm 0.39 \pm 0.07) \times 10^{-5}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \rho(770)^\pm\pi^\mp)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\pi^+\pi^-\eta)/\Gamma_{\text{total}}$ — Γ_{29}/Γ

VALUE (units 10^{-3})	CL%	DOCUMENT ID	TECN	COMMENT
0.47±0.13±0.01		[1] ATHAR 07	CLEO	$\psi(2S) \to \gamma h^+h^-h^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
<1.4	90	[2] ABLIKIM 06R	BES2	$\psi(2S) \to \gamma\chi_{c2}$

[1] ATHAR 07 reports $(0.49 \pm 0.12 \pm 0.06) \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \pi^+\pi^-\eta)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] ABLIKIM 06R reports $< 1.7 \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \pi^+\pi^-\eta)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.1 \pm 0.4) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

$\Gamma(\pi^+\pi^-\eta')/\Gamma_{\text{total}}$ — Γ_{31}/Γ

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
0.49±0.18±0.01	[1] ATHAR 07	CLEO	$\psi(2S) \to \gamma h^+h^-h^0$

[1] ATHAR 07 reports $(0.51 \pm 0.18 \pm 0.06) \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \pi^+\pi^-\eta')/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's

error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^*(892)^{\pm} K^{\mp})/\Gamma_{total}$ Γ_{35}/Γ

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
1.42±0.21±0.03	[1] ABLIKIM	17AG	BES3	$\psi(2S) \to \gamma K \overline{K} \pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.70±0.26±0.04	[2] ABLIKIM	17AG	BES3	$\psi(2S) \to \gamma K^+ K^- \pi^0$
1.32±0.26±0.03	[3] ABLIKIM	17AG	BES3	$\psi(2S) \to \gamma K^0_S K^{\pm} \pi^{\mp}$

[1] ABLIKIM 17AG reports $(1.5 \pm 0.1 \pm 0.2) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^*(892)^{\pm} K^{\mp})/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] ABLIKIM 17AG reports $(1.8 \pm 0.2 \pm 0.2) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^*(892)^{\pm} K^{\mp})/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[3] ABLIKIM 17AG reports $(1.4 \pm 0.2 \pm 0.2) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^*(892)^{\pm} K^{\mp})/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^*(892)^0 \overline{K}^0 + \text{c.c.})/\Gamma_{total}$ Γ_{36}/Γ

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
1.23±0.26±0.03	[1] ABLIKIM	17AG	BES3	$\psi(2S) \to \gamma K^0_S K^{\pm} \pi^{\mp}$

[1] ABLIKIM 17AG reports $(1.3 \pm 0.2 \pm 0.2) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^*(892)^0 \overline{K}^0 + \text{ c.c.})/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K_2^*(1430)^{\pm} K^{\mp})/\Gamma_{total}$ Γ_{37}/Γ

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
14.7±1.2±0.3	[1] ABLIKIM	17AG	BES3	$\psi(2S) \to \gamma K \overline{K} \pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
17.2±1.6±0.4	[2] ABLIKIM	17AG	BES3	$\psi(2S) \to \gamma K^+ K^- \pi^0$
12.9±1.5±0.3	[3] ABLIKIM	17AG	BES3	$\psi(2S) \to \gamma K^0_S K^{\pm} \pi^{\mp}$

[1] ABLIKIM 17AG reports $(15.5 \pm 0.6 \pm 1.2) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K_2^*(1430)^{\pm} K^{\mp})/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] ABLIKIM 17AG reports $(18.2 \pm 0.8 \pm 1.6) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \rightarrow K_2^*(1430)^{\pm} K^{\mp})/\Gamma_{total}] \times [B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[3] ABLIKIM 17AG reports $(13.6 \pm 0.8 \pm 1.4) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \rightarrow K_2^*(1430)^{\pm} K^{\mp})/\Gamma_{total}] \times [B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K_2^*(1430)^0 \overline{K}^0 + \text{c.c.})/\Gamma_{total}$ Γ_{38}/Γ

VALUE (units 10^{-4})	*DOCUMENT ID*	*TECN*	*COMMENT*
12.3±1.7±0.3	[1] ABLIKIM 17AG	BES3	$\psi(2S) \rightarrow \gamma K_S^0 K^{\pm} \pi^{\mp}$

[1] ABLIKIM 17AG reports $(13.0 \pm 1.0 \pm 1.5) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \rightarrow K_2^*(1430)^0 \overline{K}^0 + \text{c.c.})/\Gamma_{total}] \times [B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K_3^*(1780)^{\pm} K^{\mp})/\Gamma_{total}$ Γ_{39}/Γ

VALUE (units 10^{-4})	*DOCUMENT ID*	*TECN*	*COMMENT*
5.1±0.8±0.1	[1] ABLIKIM 17AG	BES3	$\psi(2S) \rightarrow \gamma K \overline{K} \pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
5.0±1.0±0.1	[2] ABLIKIM 17AG	BES3	$\psi(2S) \rightarrow \gamma K^+ K^- \pi^0$
5.6±1.8±0.1	[3] ABLIKIM 17AG	BES3	$\psi(2S) \rightarrow \gamma K_S^0 K^{\pm} \pi^{\mp}$

[1] ABLIKIM 17AG reports $(5.4 \pm 0.5 \pm 0.7) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \rightarrow K_3^*(1780)^{\pm} K^{\mp})/\Gamma_{total}] \times [B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] ABLIKIM 17AG reports $(5.3 \pm 0.5 \pm 0.9) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \rightarrow K_3^*(1780)^{\pm} K^{\mp})/\Gamma_{total}] \times [B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[3] ABLIKIM 17AG reports $(5.9 \pm 1.1 \pm 1.5) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \rightarrow K_3^*(1780)^{\pm} K^{\mp})/\Gamma_{total}] \times [B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \rightarrow \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K_3^*(1780)^0 \overline{K}^0 + \text{c.c.})/\Gamma_{\text{total}}$ — Γ_{40}/Γ

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
5.6±2.1±0.1	[1] ABLIKIM	17AG	BES3	$\psi(2S) \to \gamma K_S^0 K^\pm \pi^\mp$

[1] ABLIKIM 17AG reports $(5.9 \pm 1.6 \pm 1.5) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K_3^*(1780)^0 \overline{K}^0 + \text{c.c.})/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(a_2(1320)^0 \pi^0)/\Gamma_{\text{total}}$ — Γ_{41}/Γ

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
12.8±3.4±0.3	[1] ABLIKIM	17AG	BES3	$\psi(2S) \to \gamma K^+ K^- \pi^0$

[1] ABLIKIM 17AG reports $(13.5 \pm 1.6 \pm 3.2) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to a_2(1320)^0 \pi^0)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(a_2(1320)^\pm \pi^\mp)/\Gamma_{\text{total}}$ — Γ_{42}/Γ

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
17.4±6.0±0.4	[1] ABLIKIM	17AG	BES3	$\psi(2S) \to \gamma K_S^0 K^\pm \pi^\mp$

[1] ABLIKIM 17AG reports $(18.4 \pm 3.3 \pm 5.5) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to a_2(1320)^\pm \pi^\mp)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^+ K^- \pi^0)/\Gamma_{\text{total}}$ — Γ_{44}/Γ

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.30±0.08±0.01	[1] ATHAR	07	CLEO	$\psi(2S) \to \gamma h^+ h^- h^0$

[1] ATHAR 07 reports $(0.31 \pm 0.07 \pm 0.04) \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^+ K^- \pi^0)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^+ K^- \eta)/\Gamma_{\text{total}}$ — Γ_{45}/Γ

VALUE (units 10^{-3})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
<0.32	90		[1] ATHAR	07	CLEO	$\psi(2S) \to \gamma h^+ h^- h^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
0.181±0.004		3693	[2] ABLIKIM	24BW	BES3	$\psi(2S) \to \gamma \chi_{c2}$

[1] ATHAR 07 reports $< 0.33 \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^+ K^- \eta)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

[2] No systematic error reported.

$\Gamma(K^+ K^- \eta'(958))/\Gamma_{total}$ Γ_{46}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.51±0.08±0.04		[1] ABLIKIM	25I	BES3	$\psi(2S) \to \gamma K^+ K^- \eta'(958)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.76±0.30±0.04	107	[2,3] ABLIKIM	14J	BES3	$\psi(2S) \to \gamma K^+ K^- \eta'(958)$

[1] ABLIKIM 25I reports $(1.53 \pm 0.04 \pm 0.08) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^+ K^- \eta'(958))/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.52 \pm 0.20) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] ABLIKIM 14J reports $(1.94 \pm 0.34) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^+ K^- \eta'(958))/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.72 \pm 0.34) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[3] Superseded by ABLIKIM 25I.

$\Gamma(\eta\eta')/\Gamma_{total}$ Γ_{47}/Γ

VALUE (units 10^{-5})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
2.1±0.5±0.1		20	[1] ABLIKIM	17AI	BES3	$\psi(2S) \to \gamma\eta'\eta$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
$<$ 6	90	3.3 ± 8.0	[2] ASNER	09	CLEO	$\psi(2S) \to \gamma\eta\eta'$
$<$22	90		[3] ADAMS	07	CLEO	$\psi(2S) \to \gamma\chi_{c2}$

[1] ABLIKIM 17AI reports $(2.27 \pm 0.43 \pm 0.25) \times 10^{-5}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \eta\eta')/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] ASNER 09 reports $< 0.6 \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \eta\eta')/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

[3] Superseded by ASNER 09. ADAMS 07 reports $< 2.3 \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \eta\eta')/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = 0.0933 \pm 0.0014 \pm 0.0061$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

$\Gamma(\eta'\eta')/\Gamma_{total}$ Γ_{48}/Γ

VALUE (units 10^{-5})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
4.5±0.6±0.1		60	[1] ABLIKIM	17AI	BES3	$\psi(2S) \to \gamma\eta'\eta'$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
$<$10	90	12 ± 7	[2] ASNER	09	CLEO	$\psi(2S) \to \gamma\eta'\eta'$
$<$30	90		[3] ADAMS	07	CLEO	$\psi(2S) \to \gamma\chi_{c2}$

[1] ABLIKIM 17AI reports $(4.76 \pm 0.56 \pm 0.38) \times 10^{-5}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \eta'\eta')/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) =$

$(9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] ASNER 09 reports $< 1.0 \times 10^{-4}$ from a measurement of [$\Gamma(\chi_{c2}(1P) \to \eta'\eta')/\Gamma_{total}$] × [B($\psi(2S) \to \gamma\chi_{c2}(1P)$)] assuming B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = 9.63×10^{-2}.

[3] Superseded by ASNER 09. ADAMS 07 reports $< 3.1 \times 10^{-4}$ from a measurement of [$\Gamma(\chi_{c2}(1P) \to \eta'\eta')/\Gamma_{total}$] × [B($\psi(2S) \to \gamma\chi_{c2}(1P)$)] assuming B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $0.0933 \pm 0.0014 \pm 0.0061$, which we rescale to our best (shown rounded) value B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = 9.63×10^{-2}.

$\Gamma(\eta\eta\eta')/\Gamma_{total}$ — Γ_{49}/Γ

VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
4.1±0.9±0.1	11k	[1] ABLIKIM	25CJ	BES3	$\psi(2S) \to \gamma\chi_{c2} \to \gamma\eta\eta\eta'$

[1] ABLIKIM 25CJ reports $(4.18 \pm 0.84 \pm 0.48) \times 10^{-5}$ from a measurement of [$\Gamma(\chi_{c2}(1P) \to \eta\eta\eta')/\Gamma_{total}$] × [B($\psi(2S) \to \gamma\chi_{c2}(1P)$)] assuming B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(9.36 \pm 0.23) \times 10^{-2}$, which we rescale to our best (shown rounded) value B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\pi^+\pi^- K^0_S K^0_S)/\Gamma_{total}$ — Γ_{50}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
2.2±0.5±0.1	57 ± 11	[1] ABLIKIM	05O	BES2	$\psi(2S) \to \gamma\chi_{c2}$

[1] ABLIKIM 05O reports [$\Gamma(\chi_{c2}(1P) \to \pi^+\pi^- K^0_S K^0_S)/\Gamma_{total}$] × [B($\psi(2S) \to \gamma\chi_{c2}(1P)$)] = $(0.207 \pm 0.039 \pm 0.033) \times 10^{-3}$ which we divide by our best (shown rounded) value B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^+K^- K^0_S K^0_S)/\Gamma_{total}$ — Γ_{51}/Γ

VALUE (units 10^{-4})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
<4	90	2.3 ± 2.2	[1] ABLIKIM	05O	BES2	$e^+e^- \to \chi_{c2}\gamma$

[1] ABLIKIM 05O reports [$\Gamma(\chi_{c2}(1P) \to K^+K^- K^0_S K^0_S)/\Gamma_{total}$] × [B($\psi(2S) \to \gamma\chi_{c2}(1P)$)] < 3.5×10^{-5} which we divide by our best (shown rounded) value B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = 9.63×10^{-2}.

$\Gamma(K^0_S K^0_S K^0_S K^0_S)/\Gamma_{total}$ — Γ_{52}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.12±0.18±0.03	68	[1] ABLIKIM	19AA	BES3	$\psi(2S) \to \gamma 4K^0_S$

[1] Using B($K^0_S \to \pi^+\pi^-$) = (69.20 ± 0.05)%. ABLIKIM 19AA reports [$\Gamma(\chi_{c2}(1P) \to K^0_S K^0_S K^0_S K^0_S)/\Gamma_{total}$] × [B($\psi(2S) \to \gamma\chi_{c2}(1P)$)] = $(10.8 \pm 1.5 \pm 0.8) \times 10^{-6}$ which we divide by our best (shown rounded) value B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = $(9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value..

$\Gamma(K^+ K^- \phi)/\Gamma_{total}$ — Γ_{54}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.41±0.29±0.03	52	[1] ABLIKIM	06T	BES2	$\psi(2S) \to \gamma 2K^+ 2K^-$

[1] ABLIKIM 06T reports $(1.67 \pm 0.26 \pm 0.24) \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^+ K^- \phi)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (8.1 \pm 0.4) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\overline{K}^0 K^+ \pi^- \phi + c.c.)/\Gamma_{total}$ — Γ_{55}/Γ

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
4.83±0.32±0.66	ABLIKIM	15M	BES3	$\psi(2S) \to \gamma \chi_{c2}$

$\Gamma(K^+ K^- \pi^0 \phi)/\Gamma_{total}$ — Γ_{56}/Γ

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
2.74±0.16±0.44	ABLIKIM	15M	BES3	$\psi(2S) \to \gamma \chi_{c2}$

$\Gamma(\phi \pi^+ \pi^- \pi^0)/\Gamma_{total}$ — Γ_{59}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
0.84±0.10±0.02	408	[1] ABLIKIM	13B	BES3	$e^+ e^- \to \psi(2S) \to \gamma \chi_{c2}$

[1] ABLIKIM 13B reports $(0.93 \pm 0.06 \pm 0.10) \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \phi \pi^+ \pi^- \pi^0)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (8.72 \pm 0.34) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(p \overline{p} \pi^0)/\Gamma_{total}$ — Γ_{61}/Γ

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.46±0.04 OUR AVERAGE				
0.47±0.04±0.01	[1] ONYISI	10	CLE3	$\psi(2S) \to \gamma p \overline{p} X$
0.43±0.09±0.01	[2] ATHAR	07	CLEO	$\psi(2S) \to \gamma h^+ h^- h^0$

[1] ONYISI 10 reports $(4.83 \pm 0.25 \pm 0.35 \pm 0.31) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to p \overline{p} \pi^0)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] ATHAR 07 reports $(0.44 \pm 0.08 \pm 0.05) \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to p \overline{p} \pi^0)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(p \overline{p} \eta)/\Gamma_{total}$ — Γ_{62}/Γ

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.172±0.025 OUR AVERAGE				
0.171±0.026±0.004	[1] ONYISI	10	CLE3	$\psi(2S) \to \gamma p \overline{p} X$
0.184±0.069±0.004	[2] ATHAR	07	CLEO	$\psi(2S) \to \gamma h^+ h^- h^0$

[1] ONYISI 10 reports $(1.76 \pm 0.23 \pm 0.14 \pm 0.11) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to p\overline{p}\eta)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] ATHAR 07 reports $(0.19 \pm 0.07 \pm 0.02) \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to p\overline{p}\eta)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(p\overline{p}\omega)/\Gamma_{total}$ — Γ_{63}/Γ

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.36±0.04±0.01	[1] ONYISI	10	CLE3	$\psi(2S) \to \gamma p\overline{p}X$

[1] ONYISI 10 reports $(3.68 \pm 0.35 \pm 0.26 \pm 0.24) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to p\overline{p}\omega)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(p\overline{p}\pi^+\pi^-)/\Gamma_{total}$ — Γ_{64}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.32±0.34 OUR EVALUATION	Treating systematic error as correlated.				
1.1 ±0.5 OUR AVERAGE	Error includes scale factor of 1.6.				
1.00±0.31±0.02	51	[1] BAI	99B	BES	$\psi(2S) \to \gamma\chi_{c2}$
2.7 ±1.0 ±0.1	13	[2] TANENBAUM	78	MRK1	$\psi(2S) \to \gamma\chi_{c2}$

[1] BAI 99B reports $(1.23 \pm 0.20 \pm 0.35) \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to p\overline{p}\pi^+\pi^-)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (7.8 \pm 0.8) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] TANENBAUM 78 reports $[\Gamma(\chi_{c2}(1P) \to p\overline{p}\pi^+\pi^-)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))] = (0.26 \pm 0.10) \times 10^{-3}$ which we divide by our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(p\overline{p}\pi^0\pi^0)/\Gamma_{total}$ — Γ_{65}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.078±0.023±0.002	29.2	[1] HE	08B	CLEO	$e^+e^- \to \gamma h^+h^-h^0h^0$

[1] HE 08B reports $0.08 \pm 0.02 \pm 0.01 \pm 0.01$ % from a measurement of $[\Gamma(\chi_{c2}(1P) \to p\overline{p}\pi^0\pi^0)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(p\overline{p}\eta\pi^0)/\Gamma_{total}$ Γ_{66}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.29±0.09±0.03	1059	[1] ABLIKIM	25L	BES3	$\psi(3686) \to \gamma p\overline{p}\eta\pi^0$

[1] ABLIKIM 25L reports $(1.33 \pm 0.05 \pm 0.08) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to p\overline{p}\eta\pi^0)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.36 \pm 0.23) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(p\overline{p}\eta\eta)/\Gamma_{total}$ Γ_{67}/Γ

VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
2.6±0.5±0.1	87	[1] ABLIKIM	25CE	BES3	$\psi(2S) \to \gamma\chi_{c2}$

[1] ABLIKIM 25CE reports $(2.64 \pm 0.40 \pm 0.27) \times 10^{-5}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to p\overline{p}\eta\eta)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.36 \pm 0.23) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(p\overline{p}K^+K^-)/\Gamma_{total}$ Γ_{68}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
2.52±0.16±0.06	11463	[1] ABLIKIM	25V	BES3	$\psi(2S) \to \gamma p\overline{p}K^+K^-$

[1] ABLIKIM 25V reports $[\Gamma(\chi_{c2}(1P) \to p\overline{p}K^+K^-)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))] = (2.43 \pm 0.02 \pm 0.15) \times 10^{-5}$ which we divide by our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(p\overline{p}K^+K^-\text{(non-resonant)})/\Gamma_{total}$ Γ_{69}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.89±0.31±0.04	131 ± 12	[1] ABLIKIM	11F	BES3	$\psi(2S) \to \gamma p\overline{p}K^+K^-$

[1] ABLIKIM 11F reports $(2.08 \pm 0.19 \pm 0.30) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to p\overline{p}K^+K^-\text{(non-resonant)})/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.74 \pm 0.35) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(K^+\overline{p}\Lambda(1520)+\text{c.c.})/\Gamma_{total}$ Γ_{70}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
2.8±0.7±0.1	79 ± 13	[1] ABLIKIM	11F	BES3	$\psi(2S) \to \gamma p\overline{p}K^+K^-$

[1] ABLIKIM 11F reports $(3.06 \pm 0.50 \pm 0.54) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^+\overline{p}\Lambda(1520)+ \text{c.c.})/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.74 \pm 0.35) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\Lambda(1520)\overline{\Lambda}(1520))/\Gamma_{total}$ — Γ_{71}/Γ

VALUE (units 10^{-4})	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
4.6±1.4±0.1	29 ± 7	[1] ABLIKIM	11F	BES3	$\psi(2S) \to \gamma p\overline{p}K^+K^-$

[1] ABLIKIM 11F reports $(5.05 \pm 1.29 \pm 0.93) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \Lambda(1520)\overline{\Lambda}(1520))/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.74 \pm 0.35) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(p\overline{p}\phi)/\Gamma_{total}$ — Γ_{72}/Γ

VALUE (units 10^{-5})	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
2.8±0.9±0.1	24 ± 7	[1] ABLIKIM	11F	BES3	$\psi(2S) \to \gamma p\overline{p}K^+K^-$

[1] ABLIKIM 11F reports $(3.04 \pm 0.85 \pm 0.43) \times 10^{-5}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to p\overline{p}\phi)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.74 \pm 0.35) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(p\overline{p}K^0_S K^0_S)/\Gamma_{total}$ — Γ_{73}/Γ

VALUE	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
$<8 \times 10^{-4}$	90	[1] ABLIKIM	06D	BES2	$\psi(2S) \to \gamma\chi_{c2}$

[1] ABLIKIM 06D reports $< 7.9 \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to p\overline{p}K^0_S K^0_S)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.3 \pm 0.6) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

$\Gamma(p\overline{n}\pi^-)/\Gamma_{total}$ — Γ_{75}/Γ

VALUE (units 10^{-4})	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
8.4±0.9 OUR AVERAGE					
8.3±1.0±0.2	3309	[1] ABLIKIM	12J	BES3	$\psi(2S) \to \gamma p\overline{n}\pi^-$
10.1±3.4±0.2		[2] ABLIKIM	06I	BES2	$\psi(2S) \to \gamma p\pi^- X$

[1] ABLIKIM 12J reports $[\Gamma(\chi_{c2}(1P) \to p\overline{n}\pi^-)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))] = (0.80 \pm 0.02 \pm 0.09) \times 10^{-4}$ which we divide by our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] ABLIKIM 06I reports $[\Gamma(\chi_{c2}(1P) \to p\overline{n}\pi^-)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))] = (0.97 \pm 0.20 \pm 0.26) \times 10^{-4}$ which we divide by our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\overline{p}n\pi^+)/\Gamma_{total}$ — Γ_{76}/Γ

VALUE (units 10^{-4})	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
8.8±0.8±0.2	3732	[1] ABLIKIM	12J	BES3	$\psi(2S) \to \gamma\overline{p}n\pi^+$

[1] ABLIKIM 12J reports $[\Gamma(\chi_{c2}(1P) \to \overline{p} n \pi^+)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))] = (0.85 \pm 0.02 \pm 0.07) \times 10^{-4}$ which we divide by our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(p \overline{n} \pi^- \pi^0)/\Gamma_{total}$ Γ_{77}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
21.5±1.7±0.5	2128	[1] ABLIKIM	12J	BES3	$\psi(2S) \to \gamma p \overline{n} \pi^- \pi^0$

[1] ABLIKIM 12J reports $[\Gamma(\chi_{c2}(1P) \to p \overline{n} \pi^- \pi^0)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))] = (2.07 \pm 0.06 \pm 0.15) \times 10^{-4}$ which we divide by our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\overline{p} n \pi^+ \pi^0)/\Gamma_{total}$ Γ_{78}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
20.9±1.8±0.5	2352	[1] ABLIKIM	12J	BES3	$\psi(2S) \to \gamma \overline{p} n \pi^+ \pi^0$

[1] ABLIKIM 12J reports $[\Gamma(\chi_{c2}(1P) \to \overline{p} n \pi^+ \pi^0)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))] = (2.01 \pm 0.06 \pm 0.16) \times 10^{-4}$ which we divide by our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\Lambda \overline{\Lambda} \pi^+ \pi^-)/\Gamma_{total}$ Γ_{80}/Γ

VALUE (units 10^{-5})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
124±15±3		371	[1] ABLIKIM	12I	BES3	$\psi(2S) \to \gamma \Lambda \overline{\Lambda} \pi^+ \pi^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<350	90		[2] ABLIKIM	06D	BES2	$\psi(2S) \to \chi_{c2} \gamma$

[1] ABLIKIM 12I reports $(137.0 \pm 7.6 \pm 15.7) \times 10^{-5}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \Lambda \overline{\Lambda} \pi^+ \pi^-)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (8.72 \pm 0.34) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] Using $B(\psi(2S) \to \chi_{c2} \gamma) = (9.3 \pm 0.6)\%$.

$\Gamma(\Lambda \overline{\Lambda} \pi^+ \pi^- \text{(non-resonant)})/\Gamma_{total}$ Γ_{81}/Γ

VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
65±15±2	36	[1] ABLIKIM	12I	BES3	$\psi(2S) \to \gamma \Lambda \overline{\Lambda} \pi^+ \pi^-$

[1] ABLIKIM 12I reports $(71.8 \pm 14.5 \pm 8.2) \times 10^{-5}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \Lambda \overline{\Lambda} \pi^+ \pi^- \text{(non-resonant)})/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (8.72 \pm 0.34) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\Sigma(1385)^+ \overline{\Lambda} \pi^- + \text{c.c.})/\Gamma_{total}$ Γ_{82}/Γ

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<40	90	[1] ABLIKIM	12I	BES3	$\psi(2S) \to \gamma \Sigma(1385)^+ \overline{\Lambda} \pi^-$

[1] ABLIKIM 12I reports $< 42 \times 10^{-5}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \Sigma(1385)^+ \overline{\Lambda} \pi^- + \text{c.c.})/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (8.72 \pm 0.34) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

$\Gamma(\Sigma(1385)^- \overline{\Lambda} \pi^+ + \text{c.c.})/\Gamma_{total}$ — Γ_{83}/Γ

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<60	90	[1] ABLIKIM	12I	BES3	$\psi(2S) \to \gamma \Sigma(1385)^- \overline{\Lambda} \pi^+$

[1] ABLIKIM 12I reports $< 61 \times 10^{-5}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \Sigma(1385)^- \overline{\Lambda} \pi^+ + \text{c.c.})/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (8.72 \pm 0.34) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

$\Gamma(K^+ \overline{p} \Lambda + \text{c.c.})/\Gamma_{total}$ — Γ_{88}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
7.7±0.5 OUR AVERAGE					
7.6±0.5±0.2	5k	[1,2] ABLIKIM	13D	BES3	$\psi(2S) \to \gamma \Lambda \overline{p} K^+$
8.2±1.6±0.2		[3] ATHAR	07	CLEO	$\psi(2S) \to \gamma h^+ h^- h^0$

[1] ABLIKIM 13D reports $(8.4 \pm 0.3 \pm 0.6) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^+ \overline{p} \Lambda + \text{c.c.})/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (8.72 \pm 0.34) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] Using $B(\Lambda \to p \pi^-) = 63.9\%$.

[3] ATHAR 07 reports $(8.5 \pm 1.4 \pm 1.0) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to K^+ \overline{p} \Lambda + \text{c.c.})/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(n K^0_S \overline{\Lambda} + \text{c.c.})/\Gamma_{total}$ — Γ_{89}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
3.54±0.27±0.08	879	[1] ABLIKIM	21AV	BES3	$\psi(2S) \to \gamma n K^0_S \overline{\Lambda}$ + c.c.

[1] ABLIKIM 21AV reports $(3.58 \pm 0.16 \pm 0.23) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to n K^0_S \overline{\Lambda} + \text{c.c.})/\Gamma_{total}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = 0.0952 \pm 0.0020$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value. Also uses $B(\overline{\Lambda} \to \overline{p} \pi^+) = (63.9 \pm 0.5)\%$ and $B(K^0_S \to \pi^+ \pi^-) = (69.20 \pm 0.05)\%$.

$\Gamma(K^*(892)^+ \overline{p} \Lambda + \text{c.c.})/\Gamma_{total}$ — Γ_{90}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
8.1±1.1±0.2	476	[1] ABLIKIM	19AU	BES3	$\psi(2S) \to \gamma K^{*+} \overline{p} \Lambda$

[1] ABLIKIM 19AU reports $[\Gamma(\chi_{c2}(1P) \to K^*(892)^+ \overline{p} \Lambda + \text{c.c.})/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))] = (7.8 \pm 0.9 \pm 0.6) \times 10^{-5}$ which we divide by our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\Sigma^0 \overline{\Sigma}^0)/\Gamma_{\text{total}}$ Γ_{92}/Γ

VALUE (units 10^{-5})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
3.6±0.6±0.1		91	[1] ABLIKIM	18V	BES3	$\psi(2S) \to \gamma \Sigma^0 \overline{\Sigma}^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<6	90		[2] ABLIKIM	13H	BES3	$\psi(2S) \to \gamma \Sigma^0 \overline{\Sigma}^0$
<7	90	7.5 ± 3.4	[3] NAIK	08	CLEO	$\psi(2S) \to \gamma \Sigma^0 \overline{\Sigma}^0$

[1] ABLIKIM 18V reports $[\Gamma(\chi_{c2}(1P) \to \Sigma^0 \overline{\Sigma}^0)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))] = (0.35 \pm 0.05 \pm 0.02) \times 10^{-5}$ which we divide by our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] ABLIKIM 13H reports $< 0.65 \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \Sigma^0 \overline{\Sigma}^0)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (8.74 \pm 0.35) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

[3] NAIK 08 reports $< 0.75 \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \Sigma^0 \overline{\Sigma}^0)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

$\Gamma(\Sigma^+ \overline{\Sigma}^-)/\Gamma_{\text{total}}$ Γ_{95}/Γ

VALUE (units 10^{-5})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
3.3±0.7±0.1		55	[1] ABLIKIM	18V	BES3	$\psi(2S) \to \gamma \Sigma^+ \overline{\Sigma}^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<8	90		[2] ABLIKIM	13H	BES3	$\psi(2S) \to \gamma \Sigma^+ \overline{\Sigma}^-$
<6	90	4.0 ± 3.5	[3] NAIK	08	CLEO	$\psi(2S) \to \gamma \Sigma^+ \overline{\Sigma}^-$

[1] ABLIKIM 18V reports $[\Gamma(\chi_{c2}(1P) \to \Sigma^+ \overline{\Sigma}^-)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))] = (0.32 \pm 0.06 \pm 0.03) \times 10^{-5}$ which we divide by our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] ABLIKIM 13H reports $< 0.88 \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \Sigma^+ \overline{\Sigma}^-)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (8.74 \pm 0.35) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

[3] NAIK 08 reports $< 0.67 \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \Sigma^+ \overline{\Sigma}^-)/\Gamma_{\text{total}}] \times [B(\psi(2S) \to \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma \chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

$\Gamma(\Sigma^+ \overline{\Sigma}^- \eta)/\Gamma_{\text{total}}$ Γ_{96}/Γ

VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
5.4±1.3±0.1	35	[1] ABLIKIM	24CA	BES3	$\psi(2S) \to \gamma \chi_{c2}(1P)$

[1] ABLIKIM 24CA reports (5.46 ± 1.18 ± 0.50) × 10^{-5} from a measurement of [$\Gamma(\chi_{c2}(1P) \to \Sigma^+ \overline{\Sigma}^- \eta)/\Gamma_{total}$] × [B($\psi(2S) \to \gamma \chi_{c2}(1P)$)] assuming B($\psi(2S) \to \gamma \chi_{c2}(1P)$) = (9.52 ± 0.20) × 10^{-2}, which we rescale to our best (shown rounded) value B($\psi(2S) \to \gamma \chi_{c2}(1P)$) = (9.63 ± 0.23) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\Sigma^- \overline{\Sigma}^+)/\Gamma_{total}$ — Γ_{97}/Γ

VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
4.4±1.8±0.1	131	[1] ABLIKIM	20I	BES3	$\psi(2S) \to \gamma \Sigma^- \overline{\Sigma}^+$

[1] ABLIKIM 20I reports (4.4 ± 1.7 ± 0.5) × 10^{-5} from a measurement of [$\Gamma(\chi_{c2}(1P) \to \Sigma^- \overline{\Sigma}^+)/\Gamma_{total}$] × [B($\psi(2S) \to \gamma \chi_{c2}(1P)$)] assuming B($\psi(2S) \to \gamma \chi_{c2}(1P)$) = (9.52 ± 0.20) × 10^{-2}, which we rescale to our best (shown rounded) value B($\psi(2S) \to \gamma \chi_{c2}(1P)$) = (9.63 ± 0.23) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\Sigma(1385)^+ \overline{\Sigma}(1385)^-)/\Gamma_{total}$ — Γ_{98}/Γ

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<15	90	[1] ABLIKIM	12I	BES3	$\psi(2S) \to \gamma \Sigma(1385)^+ \overline{\Sigma}(1385)^-$

[1] ABLIKIM 12I reports < 17 × 10^{-5} from a measurement of [$\Gamma(\chi_{c2}(1P) \to \Sigma(1385)^+ \overline{\Sigma}(1385)^-)/\Gamma_{total}$] × [B($\psi(2S) \to \gamma \chi_{c2}(1P)$)] assuming B($\psi(2S) \to \gamma \chi_{c2}(1P)$) = (8.72 ± 0.34) × 10^{-2}, which we rescale to our best (shown rounded) value B($\psi(2S) \to \gamma \chi_{c2}(1P)$) = 9.63 × 10^{-2}.

$\Gamma(\Sigma(1385)^- \overline{\Sigma}(1385)^+)/\Gamma_{total}$ — Γ_{99}/Γ

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<8	90	[1] ABLIKIM	12I	BES3	$\psi(2S) \to \gamma \Sigma(1385)^- \overline{\Sigma}(1385)^+$

[1] ABLIKIM 12I reports < 8.5 × 10^{-5} from a measurement of [$\Gamma(\chi_{c2}(1P) \to \Sigma(1385)^- \overline{\Sigma}(1385)^+)/\Gamma_{total}$] × [B($\psi(2S) \to \gamma \chi_{c2}(1P)$)] assuming B($\psi(2S) \to \gamma \chi_{c2}(1P)$) = (8.72 ± 0.34) × 10^{-2}, which we rescale to our best (shown rounded) value B($\psi(2S) \to \gamma \chi_{c2}(1P)$) = 9.63 × 10^{-2}.

$\Gamma(K^- \Lambda \Xi^+ + c.c.)/\Gamma_{total}$ — Γ_{100}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.75±0.31±0.04	51	[1] ABLIKIM	15I	BES3	$\psi(2S) \to \gamma K^- \Lambda \Xi^+$ + c.c.

[1] ABLIKIM 15I reports [$\Gamma(\chi_{c2}(1P) \to K^- \Lambda \Xi^+ + c.c.)/\Gamma_{total}$] × [B($\psi(2S) \to \gamma \chi_{c2}(1P)$)] = (1.68 ± 0.26 ± 0.15) × 10^{-5} which we divide by our best (shown rounded) value B($\psi(2S) \to \gamma \chi_{c2}(1P)$) = (9.63 ± 0.23) × 10^{-2}. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(\Xi^0 \overline{\Xi}^0)/\Gamma_{total}$ — Γ_{101}/Γ

VALUE (units 10^{-4})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
1.81±0.21±0.04		804	[1] ABLIKIM	22O	BES3	$\psi(2S) \to \gamma \Xi^0 \overline{\Xi}^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<1.0	90	3	[2] NAIK	08	CLEO	$\psi(2S) \to \gamma \Xi^0 \overline{\Xi}^0$

[1] ABLIKIM 22O reports $(1.83 \pm 0.15 \pm 0.16) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \rightarrow \Xi^0 \overline{\Xi}^0)/\Gamma_{total}] \times [B(\psi(2S) \rightarrow \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \rightarrow \gamma \chi_{c2}(1P)) = (9.52 \pm 0.20) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \rightarrow \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] NAIK 08 reports $< 1.06 \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \rightarrow \Xi^0 \overline{\Xi}^0)/\Gamma_{total}] \times [B(\psi(2S) \rightarrow \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \rightarrow \gamma \chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \rightarrow \gamma \chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

$\Gamma(\Xi^- \overline{\Xi}^+)/\Gamma_{total}$ — Γ_{102}/Γ

VALUE (units 10^{-4})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
1.42±0.12 OUR AVERAGE						
1.42±0.12±0.03		1691	[1] ABLIKIM	22O	BES3	$\psi(2S) \rightarrow \gamma \Xi^- \overline{\Xi}^+$
1.41±0.31±0.03		29 ± 5	[2] NAIK	08	CLEO	$\psi(2S) \rightarrow \gamma \Xi^+ \overline{\Xi}^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
< 3.7	90		[3] ABLIKIM	06D	BES2	$\psi(2S) \rightarrow \chi_{c2} \gamma$

[1] ABLIKIM 22O reports $(1.44 \pm 0.06 \pm 0.11) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \rightarrow \Xi^- \overline{\Xi}^+)/\Gamma_{total}] \times [B(\psi(2S) \rightarrow \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \rightarrow \gamma \chi_{c2}(1P)) = (9.52 \pm 0.20) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \rightarrow \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] NAIK 08 reports $(1.45 \pm 0.30 \pm 0.15) \times 10^{-4}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \rightarrow \Xi^- \overline{\Xi}^+)/\Gamma_{total}] \times [B(\psi(2S) \rightarrow \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \rightarrow \gamma \chi_{c2}(1P)) = (9.33 \pm 0.14 \pm 0.61) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \rightarrow \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[3] Using $B(\psi(2S) \rightarrow \chi_{c2} \gamma) = (9.3 \pm 0.6)\%$.

$\Gamma(\Omega^- \overline{\Omega}^+)/\Gamma_{total}$ — Γ_{103}/Γ

VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
4.47±0.28±0.11	1038	[1] ABLIKIM	23T	BES3	$\chi_{c2} \rightarrow \Omega^- \overline{\Omega}^+$

[1] ABLIKIM 23T reports $(4.52 \pm 0.24 \pm 0.18) \times 10^{-5}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \rightarrow \Omega^- \overline{\Omega}^+)/\Gamma_{total}] \times [B(\psi(2S) \rightarrow \gamma \chi_{c2}(1P))]$ assuming $B(\psi(2S) \rightarrow \gamma \chi_{c2}(1P)) = (9.52 \pm 0.20) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \rightarrow \gamma \chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

$\Gamma(J/\psi(1S)\pi^+\pi^-\pi^0)/\Gamma_{total}$ — Γ_{104}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.015	90	BARATE	81	SPEC	190 GeV π^- Be $\rightarrow 2\pi 2\mu$

$\Gamma(\pi^0 \eta_c)/\Gamma_{total}$ — Γ_{105}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<3.2 × 10^{-3}	90	[1] ABLIKIM	15N	BES3	$\psi(2S) e^+ e^- \rightarrow \gamma \pi^0 \eta_c$

[1] Using $B(\eta_c \rightarrow K^0_S K^\pm \pi^\mp) \times B(K^0_S \rightarrow \pi^+\pi^-) \times B(\pi^0 \rightarrow \gamma\gamma) = (1.66 \pm 0.11) \times 10^{-2}$.

$\Gamma(\eta_c(1S)\pi^+\pi^-)/\Gamma_{total}$ Γ_{106}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<5 $\times 10^{-3}$	90	[1,2] ABLIKIM	13B	BES3	$e^+e^- \to \psi(2S) \to \gamma\chi_{c2}$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.011	90	[3,4] ABLIKIM	13B	BES3	$e^+e^- \to \psi(2S) \to \gamma\chi_{c2}$

[1] From the $\eta_c \to K^0_S K^\pm \pi^\mp$ decays.

[2] ABLIKIM 13B reports $< 5.4 \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \eta_c(1S)\pi^+\pi^-)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.72 \pm 0.34) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

[3] From the $\eta_c \to K^+K^-\pi^0$ decays.

[4] ABLIKIM 13B reports $< 1.2 \times 10^{-2}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \eta_c(1S)\pi^+\pi^-)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.72 \pm 0.34) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

$\Gamma(\eta_c(1S)\pi^+\pi^-)/\Gamma(\overline{K}^0 K^+\pi^- + c.c.)$ Γ_{106}/Γ_{43}

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<16.4	90	[1] LEES	12AE	BABR	$e^+e^- \to e^+e^-\pi^+\pi^-\eta_c$

[1] We divided the reported limit by 2 to take into account the $K^0_L K^+\pi^-$ mode.

RADIATIVE DECAYS

$\Gamma(\gamma\rho^0)/\Gamma_{total}$ Γ_{108}/Γ

VALUE (units 10^{-6})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
<19	90	13 ± 11	[1] ABLIKIM	11E	BES3	$\psi(2S) \to \gamma\gamma\rho^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<40	90	17.2 ± 6.8	[2] BENNETT	08A	CLEO	$\psi(2S) \to \gamma\gamma\rho^0$

[1] ABLIKIM 11E reports $< 20.8 \times 10^{-6}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \gamma\rho^0)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.74 \pm 0.35) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

[2] BENNETT 08A reports $< 50 \times 10^{-6}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \gamma\rho^0)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.1 \pm 0.4) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

$\Gamma(\gamma\omega)/\Gamma_{total}$ Γ_{109}/Γ

VALUE (units 10^{-6})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
<6	90	1 ± 6	[1] ABLIKIM	11E	BES3	$\psi(2S) \to \gamma\gamma\omega$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<6	90	0.0 ± 1.8	[2] BENNETT	08A	CLEO	$\psi(2S) \to \gamma\gamma\omega$

[1] ABLIKIM 11E reports $< 6.1 \times 10^{-6}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \gamma\omega)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.74 \pm 0.35) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

[2] BENNETT 08A reports $< 7.0 \times 10^{-6}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \gamma\omega)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.1 \pm 0.4) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

$\Gamma(\gamma\phi)/\Gamma_{total}$ Γ_{110}/Γ

VALUE (units 10^{-6})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
< 7	90	5 ± 5	[1] ABLIKIM	11E	BES3	$\psi(2S) \to \gamma\gamma\phi$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<11	90	1.3 ± 2.5	[2] BENNETT	08A	CLEO	$\psi(2S) \to \gamma\gamma\phi$

[1] ABLIKIM 11E reports $< 8.1 \times 10^{-6}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \gamma\phi)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.74 \pm 0.35) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

[2] BENNETT 08A reports $< 13 \times 10^{-6}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to \gamma\phi)/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (8.1 \pm 0.4) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = 9.63 \times 10^{-2}$.

$\Gamma(\gamma\gamma)/\Gamma(\gamma J/\psi(1S))$ $\Gamma_{111}/\Gamma_{107}$

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
1.52±0.07 OUR FIT Error includes scale factor of 1.4.				
0.99±0.18	[1] AMBROGIANI	00B	E835	$\overline{p}p \to \chi_{c2} \to \gamma\gamma, \gamma J/\psi$

[1] Calculated by us using $B(J/\psi(1S) \to e^+e^-) = 0.0593 \pm 0.0010$.

$\Gamma(\gamma\gamma)/\Gamma_{total} \times \Gamma(p\overline{p})/\Gamma_{total}$ $\Gamma_{111}/\Gamma \times \Gamma_{60}/\Gamma$

VALUE (units 10^{-8})	DOCUMENT ID		TECN	COMMENT
2.32±0.14 OUR FIT Error includes scale factor of 1.3.				
1.7 ±0.4 OUR AVERAGE				
1.60±0.42	ARMSTRONG	93	E760	$\overline{p}p \to \gamma\gamma X$
9.9 ±4.5	BAGLIN	87B	SPEC	$\overline{p}p \to \gamma\gamma X$

$\Gamma(e^+e^- J/\psi(1S))/\Gamma_{total}$ Γ_{112}/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.35±0.15±0.06	1.3k	[1,2] ABLIKIM	17I	BES3	$\psi(2S) \to \gamma e^+e^- J/\psi$

[1] ABLIKIM 17I reports $(2.48 \pm 0.08 \pm 0.16) \times 10^{-3}$ from a measurement of $[\Gamma(\chi_{c2}(1P) \to e^+e^- J/\psi(1S))/\Gamma_{total}] \times [B(\psi(2S) \to \gamma\chi_{c2}(1P))]$ assuming $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.11 \pm 0.31) \times 10^{-2}$, which we rescale to our best (shown rounded) value $B(\psi(2S) \to \gamma\chi_{c2}(1P)) = (9.63 \pm 0.23) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best (shown rounded) value.

[2] Not independent from other measurements reported by ABLIKIM 17I

$\Gamma(e^+e^- J/\psi(1S))/\Gamma(\gamma J/\psi(1S))$ $\Gamma_{112}/\Gamma_{107}$

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
11.3±0.4±0.5	1.3k	[1] ABLIKIM	17I	BES3	$\psi(2S) \to e^+e^-\gamma J/\psi$

[1] Uses $B(\psi(2S) \to \gamma\chi_{c2}(1P)) \times B(\chi_{c2}(1P) \to \gamma J/\psi(1S)) = (199.6 \pm 0.8 \pm 7.0) \times 10^{-4}$ from ABLIKIM 17N and accounts for common systematic errors.

$\Gamma(\mu^+\mu^- J/\psi(1S))/\Gamma(e^+e^- J/\psi(1S))$ $\Gamma_{113}/\Gamma_{112}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
9.40±0.79±1.15	219	ABLIKIM	19Z	BES3	$\psi(2S) \to \gamma\chi_c \to \gamma(\mu^+\mu^- J/\psi)$

$\chi_{c2}(1P)$ CROSS-PARTICLE BRANCHING RATIOS

$\Gamma(\chi_{c2}(1P) \to 2(\pi^+\pi^-))/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ $\Gamma_1/\Gamma \times \Gamma_{198}^{\psi(2S)}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.06 ±0.06 OUR FIT Error includes scale factor of 1.3.					
1.098±0.001±0.055	1042k	[1] ABLIKIM	24BT	BES3	$\psi(2S) \to \gamma\chi_{c2}$

[1] Calculated by us. The value given here is derived from the value of B($\chi_{c2} \to 2(\pi^+\pi^-)$) reported in ABLIKIM 24BT using B($\psi(2S) \to \gamma\chi_{c2}$) = (9.52 ± 0.20)% [PDG 22].

$\Gamma(\chi_{c2}(1P) \to 2(\pi^+\pi^-))/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma(\psi(2S) \to J/\psi(1S)\pi^+\pi^-)$ $\Gamma_1/\Gamma \times \Gamma_{198}^{\psi(2S)}/\Gamma_{12}^{\psi(2S)}$

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
3.06±0.17 OUR FIT Error includes scale factor of 1.3.				
3.1 ±1.0 OUR AVERAGE Error includes scale factor of 2.5.				
2.3 ±0.1 ±0.5	[1] BAI	99B	BES	$\psi(2S) \to \gamma\chi_{c2}$
4.3 ±0.6	[2] TANENBAUM	78	MRK1	$\psi(2S) \to \gamma\chi_{c2}$

[1] Calculated by us. The value for B($\chi_{c2} \to 2\pi^+2\pi^-$) reported in BAI 99B is derived using B($\psi(2S) \to \gamma\chi_{c2}$) = (7.8 ± 0.8)% and B($\psi(2S) \to J/\psi(1S)\pi^+\pi^-$) = (32.4 ± 2.6)% [BAI 98D].

[2] The value for B($\psi(2S) \to \gamma\chi_{c2}$)×B($\chi_{c2} \to 2\pi^+2\pi^-$) reported in TANENBAUM 78 is derived using B($\psi(2S) \to J/\psi(1S)\pi^+\pi^-$)×B($J/\psi(1S)\ell^+\ell^-$) = (4.6 ± 0.7)%. Calculated by us using B($J/\psi(1S) \to \ell^+\ell^-$) = 0.1181 ± 0.0020.

$\Gamma(\chi_{c2}(1P) \to K^+K^-\pi^+\pi^-)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma(\psi(2S) \to J/\psi(1S)\pi^+\pi^-)$ $\Gamma_{14}/\Gamma \times \Gamma_{198}^{\psi(2S)}/\Gamma_{12}^{\psi(2S)}$

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
2.33±0.32 OUR FIT Error includes scale factor of 1.2.				
2.5 ±0.9 OUR AVERAGE Error includes scale factor of 2.3.				
1.90±0.14±0.44	BAI	99B	BES	$\psi(2S) \to \gamma\chi_{c2}$
3.8 ±0.67	[1] TANENBAUM	78	MRK1	$\psi(2S) \to \gamma\chi_{c2}$

[1] The reported value is derived using B($\psi(2S) \to \pi^+\pi^- J/\psi$) × B($J/\psi \to \ell^+\ell^-$) = (4.6 ± 0.7)%. Calculated by us using B($J/\psi \to \ell^+\ell^-$) = 0.1181 ± 0.0020.

$\Gamma(\chi_{c2}(1P) \to K^*(892)^0\overline{K}^*(892)^0)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ $\Gamma_{18}/\Gamma \times \Gamma_{198}^{\psi(2S)}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
2.2 ±0.9 OUR FIT Error includes scale factor of 2.2.				
3.11±0.36±0.48	ABLIKIM	04H	BES2	$\psi(2S) \to \gamma\chi_{c2}$

$\Gamma(\chi_{c2}(1P) \to \phi\phi)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$

$\Gamma_{20}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.18±0.06 OUR FIT Error includes scale factor of 1.9.					
1.18±0.09 OUR AVERAGE Error includes scale factor of 2.5.					
1.21±0.03±0.02	4.2k	[1] ABLIKIM	23N	BES3	$\psi(2S) \to \gamma 2K^+ 2K^-$
0.94±0.06±0.08	219	[2,3] ABLIKIM	11K	BES3	$\psi(2S) \to \gamma K^+ K^- \pi^+ \pi^- \pi^0$
1.38±0.24±0.23	41	[4] ABLIKIM	06T	BES2	$\psi(2S) \to \gamma 2K^+ 2K^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.94±0.03±0.09	630	[2,5,6] ABLIKIM	11K	BES3	$\psi(2S) \to \gamma 2K^+ 2K^-$

[1] Calculated by us. The value of B($\chi_{c2} \to \phi\phi$) reported by ABLIKIM 23N was derived using B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = (9.52 ± 0.20)%.

[2] Calculated by us. The value of B($\chi_{c2} \to \phi\phi$) reported by ABLIKIM 11K was derived using B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = (8.74 ± 0.35)%.

[3] Using $\phi\phi \to K^+ K^- \pi^+ \pi^- \pi^0$.

[4] Calculated by us. The value of B($\chi_{c2} \to \phi\phi$) reported by ABLIKIM 06T was derived using B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = (8.1 ± 0.4)%.

[5] Using $\phi\phi \to 2(K^+ K^-)$.

[6] Superseded by ABLIKIM 23N.

$\Gamma(\chi_{c2}(1P) \to \phi\phi)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma(\psi(2S) \to J/\psi(1S)\pi^+\pi^-)$

$\Gamma_{20}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}_{12}$

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
3.38±0.18 OUR FIT Error includes scale factor of 1.8.				
4.8 ±1.3 ±1.3	[1] BAI	99B	BES	$\psi(2S) \to \gamma 2K^+ 2K^-$

[1] Calculated by us. The value of B($\chi_{c2} \to \phi\phi$) reported by BAI 99B was derived using B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = (7.8 ± 0.8)% and B($\psi(2S) \to J/\psi\pi^+\pi^-$) = (32.4 ± 2.6)% [BAI 98D].

$\Gamma(\chi_{c2}(1P) \to \pi\pi)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$

$\Gamma_{25}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
22.41±0.33 OUR FIT Error includes scale factor of 1.1.					
22.49±0.30 OUR AVERAGE					
22.6 ±0.1 ±0.3		[1] ABLIKIM	25CH	BES3	$\psi(2S) \to \gamma\chi_{c2}$
21.9 ±0.5 ±1.5	4.5k	[2] ABLIKIM	10A	BES3	$e^+ e^- \to \psi(2S) \to \gamma\chi_{c2}$
22.3 ±0.6 ±1.0	2.5k	[3] ASNER	09	CLEO	$\psi(2S) \to \gamma\pi^+\pi^-$
19.0 ±0.8 ±2.0	0.8k	[4] ASNER	09	CLEO	$\psi(2S) \to \gamma\pi^0\pi^0$

[1] Calculated by us. ABLIKIM 25CH reports B($\chi_{c2} \to \pi^+\pi^-$) = (1.61 ± 0.01 ± 0.02) × 10^{-3} using B($\psi(2S) \to \gamma\chi_{c2}$) = (9.36 ± 0.23)%. We have multiplied the $\pi^+\pi^-$ measurement by 3/2 to obtain $\pi\pi$.

[2] Calculated by us. ABLIKIM 10A reports B($\chi_{c2} \to \pi^0\pi^0$) = (0.88 ± 0.02 ± 0.06 ± 0.04) × 10^{-3} using B($\psi(2S) \to \gamma\chi_{c2}$) = (8.3 ± 0.4)%. We have multiplied the $\pi^0\pi^0$ measurement by 3 to obtain $\pi\pi$.

[3] Calculated by us. ASNER 09 reports B($\chi_{c2} \to \pi^+\pi^-$) = (1.59 ± 0.04 ± 0.07 ± 0.10) × 10^{-3} using B($\psi(2S) \to \gamma\chi_{c2}$) = (9.33 ± 0.14 ± 0.61)%. We have multiplied the $\pi^+\pi^-$ measurement by 3/2 to obtain $\pi\pi$.

[4] Calculated by us. ASNER 09 reports $B(\chi_{c2} \to \pi^0\pi^0) = (0.68 \pm 0.03 \pm 0.07 \pm 0.04) \times 10^{-3}$ using $B(\psi(2S) \to \gamma\chi_{c2}) = (9.33 \pm 0.14 \pm 0.61)\%$. We have multiplied the $\pi^0\pi^0$ measurement by 3 to obtain $\pi\pi$.

$\Gamma(\chi_{c2}(1P) \to \pi\pi)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma(\psi(2S) \to J/\psi(1S)\pi^+\pi^-)$ — $\Gamma_{25}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}_{12}$

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
0.644±0.011 OUR FIT	Error includes scale factor of 1.1.				
0.54 ±0.06 OUR AVERAGE					
0.66 ±0.18 ±0.37	21 ± 6	[1] BAI	03C	BES	$\psi(2S) \to \gamma\pi^0\pi^0$
0.54 ±0.05 ±0.04	185 ± 16	[2] BAI	98I	BES	$\psi(2S) \to \gamma\pi^+\pi^-$

[1] We have multiplied $\pi^0\pi^0$ measurement by 3 to obtain $\pi\pi$.
[2] Calculated by us. The value for $B(\chi_{c2} \to \pi^+\pi^-)$ reported by BAI 98I is derived using $B(\psi(2S) \to \gamma\chi_{c2}) = (7.8 \pm 0.8)\%$ and $B(\psi(2S) \to J/\psi\pi^+\pi^-) = (32.4 \pm 2.6)\%$ [BAI 98D]. We have multiplied $\pi^+\pi^-$ measurement by 3/2 to obtain $\pi\pi$.

$\Gamma(\chi_{c2}(1P) \to 2\pi^+2\pi^-\eta)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ — $\Gamma_{30}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
55.3±0.3±5.3	51k	ABLIKIM	25R	BES3	$e^+e^- \to \psi(2S)$

$\Gamma(\chi_{c2}(1P) \to \eta\eta)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ — $\Gamma_{32}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-4})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
0.52±0.04 OUR FIT						
0.52±0.04 OUR AVERAGE						
0.54±0.03±0.04		386	[1] ABLIKIM	10A	BES3	$e^+e^- \to \psi(2S) \to \gamma\chi_{c2}$
0.47±0.05±0.05		156	ASNER	09	CLEO	$\psi(2S) \to \gamma\eta\eta$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
< 0.44	90		[2] ADAMS	07	CLEO	$\psi(2S) \to \gamma\chi_{c2}$
< 3	90		BAI	03C	BES	$\psi(2S) \to \gamma\eta\eta \to 5\gamma$
0.62±0.31±0.19			LEE	85	CBAL	$\psi(2S) \to$ photons

[1] Calculated by us. ABLIKIM 10A reports $B(\chi_{c2} \to \eta\eta) = (0.65 \pm 0.04 \pm 0.05 \pm 0.03) \times 10^{-3}$ using $B(\psi(2S) \to \gamma\chi_{c2}) = (8.3 \pm 0.4)\%$.
[2] Superseded by ASNER 09.

$\Gamma(\chi_{c2}(1P) \to K^+K^-)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ — $\Gamma_{33}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
11.2 ±0.5 OUR FIT	Error includes scale factor of 2.2.				
11.31±0.27 OUR AVERAGE	Error includes scale factor of 1.3.				
11.4 ±0.1 ±0.2		[1] ABLIKIM	25CH	BES3	$\psi(2S) \to \gamma\chi_{c2}$
10.5 ±0.3 ±0.6	1.6k	[2] ASNER	09	CLEO	$\psi(2S) \to \gamma K^+K^-$

[1] Calculated by us. ABLIKIM 25CH reports $B(\chi_{c2} \to K^+K^-) = (1.22 \pm 0.01 \pm 0.02) \times 10^{-3}$ using $B(\psi(2S) \to \gamma\chi_{c2}) = (9.36 \pm 0.23)\%$.
[2] Calculated by us. ASNER 09 reports $B(\chi_{c2} \to K^+K^-) = (1.13 \pm 0.03 \pm 0.06 \pm 0.07) \times 10^{-3}$ using $B(\psi(2S) \to \gamma\chi_{c2}) = (9.33 \pm 0.14 \pm 0.61)\%$.

$\Gamma(\chi_{c2}(1P) \to K^+K^-)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma(\psi(2S) \to J/\psi(1S)\pi^+\pi^-)$ $\Gamma_{33}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}_{12}$

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
0.321±0.014 OUR FIT	Error includes scale factor of 2.1.				
0.190±0.034±0.019	115 ± 13	[1] BAI	98I	BES	$\psi(2S) \to \gamma K^+K^-$

[1] Calculated by us. The value for B($\chi_{c2} \to K^+K^-$) reported by BAI 98I is derived using B($\psi(2S) \to \gamma\chi_{c2}$) = (7.8 ± 0.8)% and B($\psi(2S) \to J/\psi\pi^+\pi^-$) = (32.4 ± 2.6)% [BAI 98D].

$\Gamma(\chi_{c2}(1P) \to K^0_S K^0_S)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ $\Gamma_{34}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
5.0 ±0.4 OUR FIT					
5.0 ±0.4 OUR AVERAGE					
4.9 ±0.3 ±0.3	373 ± 20	[1] ASNER	09	CLEO	$\psi(2S) \to \gamma K^0_S K^0_S$
5.72±0.76±0.63	65	ABLIKIM	05O	BES2	$\psi(2S) \to \gamma K^0_S K^0_S$

[1] Calculated by us. ASNER 09 reports B($\chi_{c2} \to K^0_S K^0_S$) = (0.53 ± 0.03 ± 0.03 ± 0.03) × 10^{-3} using B($\psi(2S) \to \gamma\chi_{c2}$) = (9.33 ± 0.14 ± 0.61)%.

$\Gamma(\chi_{c2}(1P) \to K^0_S K^0_S)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma(\psi(2S) \to J/\psi(1S)\pi^+\pi^-)$ $\Gamma_{34}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}_{12}$

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
14.4±1.1 OUR FIT				
14.7±4.1±3.3	[1] BAI	99B	BES	$\psi(2S) \to \gamma K^0_S K^0_S$

[1] Calculated by us. The value of B($\chi_{c2} \to K^0_S K^0_S$) reported by BAI 99B was derived using B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = (7.8 ± 0.8)% and B($\psi(2S) \to J/\psi\pi^+\pi^-$) = (32.4 ± 2.6)% [BAI 98D].

$\Gamma(\chi_{c2}(1P) \to \overline{K}^0 K^+\pi^- + c.c.)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ $\Gamma_{43}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.22±0.18 OUR FIT					
1.15±0.18 OUR AVERAGE					
1.21±0.19±0.09	37	[1] ATHAR	07	CLEO	$\psi(2S) \to \gamma K^0_S K^\pm\pi^\mp$
0.97±0.32±0.13	28	[2] ABLIKIM	06R	BES2	$\psi(2S) \to \gamma K^0_S K^\pm\pi^\mp$

[1] Calculated by us. ATHAR 07 reports B($\chi_{c2} \to \overline{K}^0 K^+\pi^-$ + c.c.) = (1.3 ± 0.2 ± 0.1 ± 0.1) × 10^{-3} using B($\psi(2S) \to \gamma\chi_{c2}$) = (9.33 ± 0.14 ± 0.61)%.
[2] Calculated by us. ABLIKIM 06R reports B($\chi_{c2} \to K^0_S K^\pm\pi^\mp$) = (0.6 ± 0.2 ± 0.1) × 10^{-3} using B($\psi(2S) \to \gamma\chi_{c2}$) = (8.1 ± 0.6)%. We have multiplied by 2 to obtain $\overline{K}^0 K^+\pi^-$ + c.c. from $K^0_S K^\pm\pi^\mp$.

$\Gamma(\chi_{c2}(1P) \to K^+K^-K^+K^-)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ $\Gamma_{53}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
1.58±0.21 OUR FIT	Error includes scale factor of 1.1.				
1.76±0.16±0.24	160	[1] ABLIKIM	06T	BES2	$\psi(2S) \to \gamma 2K^+2K^-$

[1] Calculated by us. The value of B($\chi_{c2} \to 2K^+2K^-$) reported by ABLIKIM 06T was derived using B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = (8.1 ± 0.4)%.

$\Gamma(\chi_{c2}(1P) \to K^+K^-K^+K^-)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma(\psi(2S) \to J/\psi(1S)\pi^+\pi^-)$ — $\Gamma_{53}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}_{12}$

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
4.5±0.6 OUR FIT Error includes scale factor of 1.1.				
3.6±0.6±0.6	[1] BAI	99B	BES	$\psi(2S) \to \gamma 2K^+2K^-$

[1] Calculated by us. The value of B($\chi_{c2} \to 2K^+2K^-$) reported by BAI 99B was derived using B($\psi(2S) \to \gamma\chi_{c2}(1P)$) = (7.8 ± 0.8)% and B($\psi(2S) \to J/\psi\pi^+\pi^-$) = (32.4 ± 2.6)% [BAI 98D].

$\Gamma(\chi_{c2}(1P) \to K^0_S K^0_S K^0_S K^\pm\pi^\mp)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ — $\Gamma_{57}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
16.4±0.6±1.4	767	[1] ABLIKIM	25AY	BES3	$\psi(3686) \to \gamma\chi_{c2}$

[1] ABLIKIM 24AY reports also a measurement B($\chi_{c2}(1P) \to K^0_S K^0_S K^0_S K^\pm\pi^\mp$) = $(17.2 \pm 0.7 \pm 1.5) \times 10^{-5}$ from this product branching fraction using PDG 24 B($\psi(2S) \to \gamma\chi_{c2}$) value.

$\Gamma(\chi_{c2}(1P) \to 3(K^+K^-))/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ — $\Gamma_{58}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-7})	EVTS	DOCUMENT ID		TECN	COMMENT
6.8±1.1±0.8	46.4 ± 7.0	[1] ABLIKIM	24P	BES3	$e^+e^- \to \psi(2S)$

[1] Systematic error derived by us, based on the text.

$\Gamma(\chi_{c2}(1P) \to p\overline{p})/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma(\psi(2S) \to J/\psi(1S)\pi^+\pi^-)$ — $\Gamma_{60}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}_{12}$

VALUE (units 10^{-5})	DOCUMENT ID		TECN	COMMENT
2.23±0.09 OUR FIT Error includes scale factor of 1.9.				
1.4 ±1.1	[1] BAI	98I	BES	$\psi(2S) \to \gamma\chi_{c2} \to \gamma\overline{p}p$

[1] Calculated by us. The value for B($\chi_{c2} \to p\overline{p}$) reported in BAI 98I is derived using B($\psi(2S) \to \gamma\chi_{c2}$) = (7.8 ± 0.8)% and B($\psi(2S) \to J/\psi(1S)\pi^+\pi^-$) = (32.4 ± 2.6)% [BAI 98D].

$\Gamma(\chi_{c2}(1P) \to p\overline{p})/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ — $\Gamma_{60}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
7.75±0.29 OUR FIT Error includes scale factor of 2.0.					
7.87±0.15 OUR AVERAGE					
7.93±0.09±0.13	10672	[1] ABLIKIM	25H	BES3	$\psi(2S) \to \gamma p\overline{p}$
7.2 ±0.7 ±0.4	121 ± 12	[2] NAIK	08	CLEO	$\psi(2S) \to \gamma p\overline{p}$
$4.4^{+1.6}_{-1.4} \pm 0.6$	$14.3^{+5.2}_{-4.7}$	BAI	04F	BES	$\psi(2S) \to \gamma\chi_{c2}(1P) \to \gamma\overline{p}p$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
7.3 ±0.4 ±0.3	405	[3] ABLIKIM	13V	BES3	$\psi(2S) \to \gamma p\overline{p}$

[1] Calculated by us. ABLIKIM 25H reports B($\chi_{c2} \to p\overline{p}$) = $(8.33 \pm 0.09 \pm 0.22) \times 10^{-5}$ using B($\psi(2S) \to \gamma\chi_{c2}$) = (9.52 ± 0.20)%.
[2] Calculated by us. NAIK 08 reports B($\chi_{c2} \to p\overline{p}$) = $(7.7 \pm 0.8 \pm 0.4 \pm 0.5) \times 10^{-5}$ using B($\psi(2S) \to \gamma\chi_{c2}$) = $(9.33 \pm 0.14 \pm 0.61)$%.
[3] Superseded by ABLIKIM 25H

$\Gamma(\chi_{c2}(1P) \to p\overline{p}K^0_S K^-\pi^+ + \text{c.c.})/\Gamma_{\text{total}} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{\text{total}}$ $\quad \Gamma_{74}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
5.36±0.26±0.43	574	ABLIKIM	24BX	BES3	$\psi(2S) \to \gamma\chi_{c2}$

$\Gamma(\chi_{c2}(1P) \to \Lambda\overline{\Lambda})/\Gamma_{\text{total}} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{\text{total}}$ $\quad \Gamma_{79}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
17.4±1.4 OUR FIT					
17.3±1.5 OUR AVERAGE					
18.2±0.8±1.7	670	ABLIKIM	21L	BES3	$\psi(2S) \to \gamma p\pi^-\overline{p}\pi^+$
15.9±2.1±1.0	71	[1] NAIK	08	CLEO	$\psi(2S) \to \gamma\Lambda\overline{\Lambda}$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
18.2±1.4±0.9	207	[2,3] ABLIKIM	13H	BES3	$\psi(2S) \to \gamma\Lambda\overline{\Lambda}$

[1] Calculated by us. NAIK 08 reports B($\chi_{c2} \to \Lambda\overline{\Lambda}$) = $(17.0 \pm 2.2 \pm 1.1 \pm 1.1) \times 10^{-5}$ using B($\psi(2S) \to \gamma\chi_{c2}$) = $(9.33 \pm 0.14 \pm 0.61)$%.
[2] Superseded by ABLIKIM 21L
[3] Calculated by us. ABLIKIM 13H reports B($\chi_{c2} \to \Lambda\overline{\Lambda}$) = $(20.8 \pm 1.6 \pm 2.3) \times 10^{-5}$ from a measurement of B($\chi_{c2} \to \Lambda\overline{\Lambda}$) × B($\psi(2S) \to \gamma\chi_{c2}$) assuming B($\psi(2S) \to \gamma\chi_{c2}$) = (8.74 ± 0.35)%.

$\Gamma(\chi_{c2}(1P) \to \Lambda\overline{\Lambda})/\Gamma_{\text{total}} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma(\psi(2S) \to J/\psi(1S)\pi^+\pi^-)$ $\quad \Gamma_{79}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}_{12}$

VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
5.0±0.4 OUR FIT					
$\mathbf{7.1^{+3.1}_{-2.9}\pm1.3}$	$8.3^{+3.7}_{-3.4}$	[1] BAI	03E	BES	$\psi(2S) \to \gamma\Lambda\overline{\Lambda}$

[1] BAI 03E reports [B($\chi_{c2} \to \Lambda\overline{\Lambda}$) B($\psi(2S) \to \gamma\chi_{c2}$) / B($\psi(2S) \to J/\psi\pi^+\pi^-$)] × [B^2($\Lambda \to \pi^- p$) / B($J/\psi \to p\overline{p}$)] = $(1.33^{+0.59}_{-0.55} \pm 0.25)$%. We calculate from this measurement the presented value using B($\Lambda \to \pi^- p$) = (63.9 ± 0.5)% and B($J/\psi \to p\overline{p}$) = $(2.17 \pm 0.07) \times 10^{-3}$.

$\Gamma(\chi_{c2}(1P) \to \Lambda\overline{\Lambda}\eta)/\Gamma_{\text{total}} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{\text{total}}$ $\quad \Gamma_{84}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
1.00±0.20±0.14	32	ABLIKIM	22AO	BES3	$\psi(2S) \to \gamma p\pi^-\overline{p}\pi^+\gamma\gamma$

$\Gamma(\chi_{c2}(1P) \to \Lambda\overline{\Lambda}\eta')/\Gamma_{\text{total}} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{\text{total}}$ $\quad \Gamma_{85}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-6})	DOCUMENT ID		TECN	COMMENT
2.84±0.57±0.26	[1] ABLIKIM	25BX	BES3	$\psi(2S) \to \gamma\chi_{c2}$

[1] Calculated by us. ABLIKIM 25BX reports $B(\chi_{c2} \to \Lambda\overline{\Lambda}\eta') = (3.03 \pm 0.61 \pm 0.29) \times 10^{-5}$ from a measurement of $B(\chi_{c2} \to \Lambda\overline{\Lambda}\eta') \times B(\psi(2S) \to \gamma\chi_{c2})$ assuming $B(\psi(2S) \to \gamma\chi_{c2}) = (9.36 \pm 0.23)\%$.

$\Gamma(\chi_{c2}(1P) \to \Lambda\overline{\Lambda}\omega)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ $\Gamma_{86}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
13.3±1.2±1.6	251 ± 23	[1] ABLIKIM	24BE	BES3	$e^+e^- \to \psi(2S) \to \gamma\chi_{c2}$

[1] Calculated by us. The authors report $B(\chi_{c2} \to \Lambda\overline{\Lambda}\omega)$ obtained from a product using PDG 22 value of $B(\psi(2S) \to \gamma\chi_{c2})$.

$\Gamma(\chi_{c2}(1P) \to \Lambda\overline{\Lambda}\phi)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ $\Gamma_{87}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
6.79±0.77±0.35	94.4	ABLIKIM	24AC	BES3	$\psi(2S) \to \gamma\chi_{c2}$

$\Gamma(\chi_{c2}(1P) \to \overline{p}\Lambda(1520)K^0_S\pi^+ + \text{c.c.})/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ $\Gamma_{91}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
$3.89^{+0.83}_{-0.80}\pm0.39$	94	ABLIKIM	24BX	BES3	$\psi(2S) \to \gamma\chi_{c2}$

$\Gamma(\chi_{c2}(1P) \to \Sigma^+\overline{p}K^0_S + \text{c.c.})/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ $\Gamma_{93}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
7.85±0.77±0.44	129	[1] ABLIKIM	19BB	BES3	$\psi(2S) \to \gamma\Sigma^+\overline{p}K^0_S$ + c.c.

[1] Calculated by us. ABLIKIM 19BB reports $B(\chi_{c2} \to \Sigma^+\overline{p}K^0_S + \text{c.c.}) = (8.25 \pm 0.83 \pm 0.49) \times 10^{-5}$ using $B(\psi(2S) \to \gamma\chi_{c2}) = (9.52 \pm 0.20)\%$ and other branching fractions from PDG 18.

$\Gamma(\chi_{c2}(1P) \to \Sigma^0\overline{p}K^+ + \text{c.c.})/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ $\Gamma_{94}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
0.87±0.06±0.04	271	[1] ABLIKIM	20AE	BES3	$\psi(2S) \to \gamma\Sigma^0\overline{p}K^+$ + c.c.

[1] Calculated by us. ABLIKIM 20AE reports $B(\chi_{c2} \to \Sigma^0\overline{p}K^+ + \text{c.c.}) = (0.91 \pm 0.06 \pm 0.05) \times 10^{-4}$ using $B(\psi(2S) \to \gamma\chi_{c2}) = (9.52 \pm 0.20)\%$ and other branching fractions from PDG 20.

$\Gamma(\chi_{c2}(1P) \to \gamma J/\psi(1S))/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ $\Gamma_{107}/\Gamma \times \Gamma^{\psi(2S)}_{198}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
1.82 ±0.07 OUR FIT	Error includes scale factor of 1.9.				
1.69 ±0.16 OUR AVERAGE	Error includes scale factor of 3.4. See the ideogram below.				
1.996±0.008±0.070	81k	[1] ABLIKIM	17N	BES3	$\psi(2S) \to \gamma\gamma J/\psi$
1.793±0.008±0.163	1.0M	ABLIKIM	17U	BES3	$e^+e^- \to \gamma X$

1.62 $\pm$0.04 $\pm$0.12	5.8k	BAI	04I	BES2	$\psi(2S) \rightarrow J/\psi\gamma\gamma$
0.99 $\pm$0.10 $\pm$0.08		GAISER	86	CBAL	$\psi(2S) \rightarrow \gamma X$
1.47 $\pm$0.17		[2] OREGLIA	82	CBAL	$\psi(2S) \rightarrow \gamma\chi_{c2}$
1.8 $\pm$0.5		[3] BRANDELIK	79B	DASP	$\psi(2S) \rightarrow \gamma\chi_{c2}$
1.2 $\pm$0.2		[3] BARTEL	78B	CNTR	$\psi(2S) \rightarrow \gamma\chi_{c2}$
2.2 $\pm$1.2		[4] BIDDICK	77	CNTR	$e^+e^- \rightarrow \gamma X$
1.2 $\pm$0.7		[2] WHITAKER	76	MRK1	e^+e^-

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

1.874$\pm$0.007$\pm$0.102	76k	[5] ABLIKIM	12O	BES3	$\psi(2S) \rightarrow \gamma\chi_{c2}$
1.95 $\pm$0.02 $\pm$0.07	12.4k	[6] MENDEZ	08	CLEO	$\psi(2S) \rightarrow \gamma\chi_{c2}$
1.85 $\pm$0.04 $\pm$0.07	1.9k	[7] ADAM	05A	CLEO	Repl. by MENDEZ 08

[1] Uses B($J/\psi \rightarrow e^+e^-$) = (5.971 $\pm$ 0.032)% and B($J/\psi \rightarrow \mu^+\mu^-$) = (5.961 $\pm$ 0.033)%.

[2] Recalculated by us using B($J/\psi(1S) \rightarrow \ell^+\ell^-$) = 0.1181 $\pm$ 0.0020.

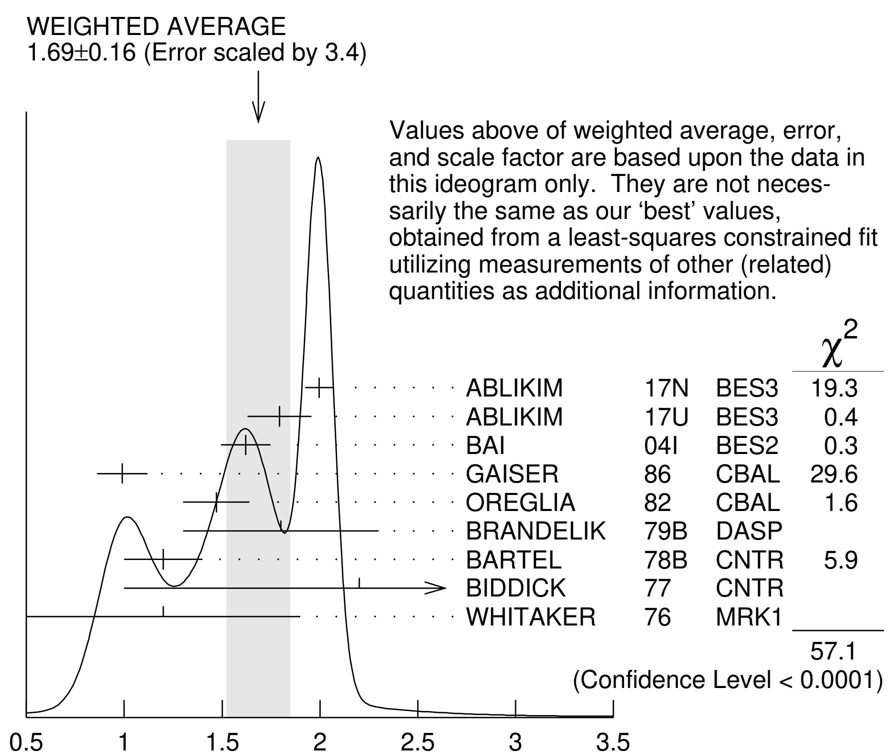
[3] Recalculated by us using B($J/\psi(1S) \rightarrow \mu^+\mu^-$) = 0.0588 $\pm$ 0.0010.

[4] Assumes isotropic gamma distribution.

[5] Superseded by ABLIKIM 17N.

[6] Not independent from other measurements of MENDEZ 08.

[7] Not independent from other values reported by ADAM 05A.



$\Gamma\left(\chi_{c2}(1P) \rightarrow \gamma J/\psi(1S)\right)/\Gamma_{total} \times \Gamma\left(\psi(2S) \rightarrow \gamma\chi_{c2}(1P)\right)/\Gamma_{total}$ (units 10^{-2})

$\Gamma(\chi_{c2}(1P) \to \gamma J/\psi(1S))/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma(\psi(2S) \to J/\psi(1S)\pi^+\pi^-)$ $\Gamma_{107}/\Gamma \times \Gamma_{198}^{\psi(2S)}/\Gamma_{12}^{\psi(2S)}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
5.25±0.19 OUR FIT	Error includes scale factor of 1.8.				
5.53±0.17 OUR AVERAGE					
5.56±0.05±0.16	12.4k	MENDEZ	08	CLEO	$\psi(2S) \to \gamma\chi_{c2}$
6.0 ±2.8	1.3k	[1] ABLIKIM	04B	BES	$\psi(2S) \to J/\psi X$
3.9 ±1.2		[2] HIMEL	80	MRK2	$\psi(2S) \to \gamma\chi_{c2}$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
5.52±0.13±0.13	1.9k	[3] ADAM	05A	CLEO	Repl. by MENDEZ 08

[1] From a fit to the J/ψ recoil mass spectra.

[2] The value for $B(\psi(2S) \to \gamma\chi_{c2}) \times B(\chi_{c2} \to \gamma J/\psi(1S))$ reported in HIMEL 80 is derived using $B(\psi(2S) \to J/\psi(1S)\pi^+\pi^-) = (33 \pm 3)\%$ and $B(J/\psi(1S) \to \ell^+\ell^-) = 0.138 \pm 0.018$. Calculated by us using $B(J/\psi(1S) \to \ell^+\ell^-) = (0.1181 \pm 0.0020)$.

[3] Not independent from other values reported by ADAM 05A.

$\Gamma(\chi_{c2}(1P) \to \gamma\gamma)/\Gamma_{total} \times \Gamma(\psi(2S) \to \gamma\chi_{c2}(1P))/\Gamma_{total}$ $\Gamma_{111}/\Gamma \times \Gamma_{198}^{\psi(2S)}/\Gamma^{\psi(2S)}$

VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
2.78±0.09 OUR FIT	Error includes scale factor of 1.1.				
2.82±0.10 OUR AVERAGE					
2.83±0.08±0.06	5k	[1] ABLIKIM	17AE	BES3	$\psi(2S) \to \gamma\chi_{c2} \to 3\gamma$
2.68±0.28±0.15	0.3k	ECKLUND	08A	CLEO	$\psi(2S) \to \gamma\chi_{c2} \to 3\gamma$
7.0 ±2.1 ±2.0		LEE	85	CBAL	$\psi(2S) \to \gamma\chi_{c2}$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2.81±0.17±0.15	1.1k	[2] ABLIKIM	12A	BES3	$\psi(2S) \to \gamma\chi_{c2} \to 3\gamma$

[1] ABLIKIM 17AE measures the ratio of two-photon partial widths for the helicity $\lambda = 0$ and helicity $\lambda = 2$ components to be $f_{0/2} = \Gamma_{\gamma\gamma}^{\lambda=0} / \Gamma_{\gamma\gamma}^{\lambda=2} = 0.000 \pm 0.006 \pm 0.012$.

[2] ABLIKIM 12A measures the ratio of two-photon partial widths for the helicity $\lambda = 0$ and helicity $\lambda = 2$ components to be $f_{0/2} = \Gamma_{\gamma\gamma}^{\lambda=0}/\Gamma_{\gamma\gamma}^{\lambda=2} = 0.00 \pm 0.02 \pm 0.02$. Superseded by ABLIKIM 17AE.

$\Gamma(\chi_{c2}(1P) \to \gamma\gamma)/\Gamma(\chi_{c0}(1P) \to \gamma\gamma)$ $\Gamma_{111}/\Gamma_{111}^{\chi_{c0}(1P)}$

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.292±0.028 OUR AVERAGE					
0.295±0.014±0.028	8k	[1] ABLIKIM	17AE	BES3	$\psi(2S) \to \gamma\chi_{cJ} \to 3\gamma$
0.278±0.050±0.036	0.5k	[1] ECKLUND	08A	CLEO	$\psi(2S) \to \gamma\chi_{cJ} \to 3\gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.271±0.029±0.030	1.9k	[1,2] ABLIKIM	12A	BES3	$\psi(2S) \to \gamma\chi_{cJ} \to 3\gamma$

[1] Not independent from the values of $\Gamma(\chi_{c0}, \chi_{c2})$ and $B(\psi(2S) \to \chi_{c0}, \chi_{c2})$.

[2] Superseded by ABLIKIM 17AE.

MULTIPOLE AMPLITUDES IN $\chi_{c2}(1P) \to \gamma J/\psi(1S)$ RADIATIVE DECAY

$a_2 = M2/\sqrt{E1^2 + M2^2 + E3^2}$ Magnetic quadrupole fractional transition amplitude

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
−11.0± 1.0 OUR AVERAGE					
−12.0± 1.3±0.4	89k	[1] ABLIKIM	17N	BES3	$\psi(2S) \to \gamma\gamma\ell^+\ell^-$
− 9.3± 1.6±0.3	19.8k	[2] ARTUSO	09	CLEO	$\psi(2S) \to \gamma\gamma\ell^+\ell^-$
$-9.3^{+3.9}_{-4.1}\pm0.6$	5.9k	[3] AMBROGIANI	02	E835	$p\overline{p} \to \chi_{c2} \to J/\psi\gamma$
−14 ± 6	1.9k	[3] ARMSTRONG	93E	E760	$p\overline{p} \to \chi_{c2} \to J/\psi\gamma$
$-33.3^{+11.6}_{-29.2}$	441	[3] OREGLIA	82	CBAL	$\psi(2S) \to \chi_{c1}\gamma \to J/\psi\gamma\gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
− 7.9± 1.9±0.3	19.8k	[4] ARTUSO	09	CLEO	$\psi(2S) \to \gamma\gamma\ell^+\ell^-$

[1] Correlated with a_3, b_2, and b_3 with correlation coefficients $\rho_{a_2 a_3} = 0.733$, $\rho_{a_2 b_2} = -0.605$, and $\rho_{a_2 b_3} = -0.095$.

[2] From a fit with floating M2 amplitudes a_2 and b_2, and fixed E3 amplitudes a_3=b_3=0.

[3] Assuming a_3=0.

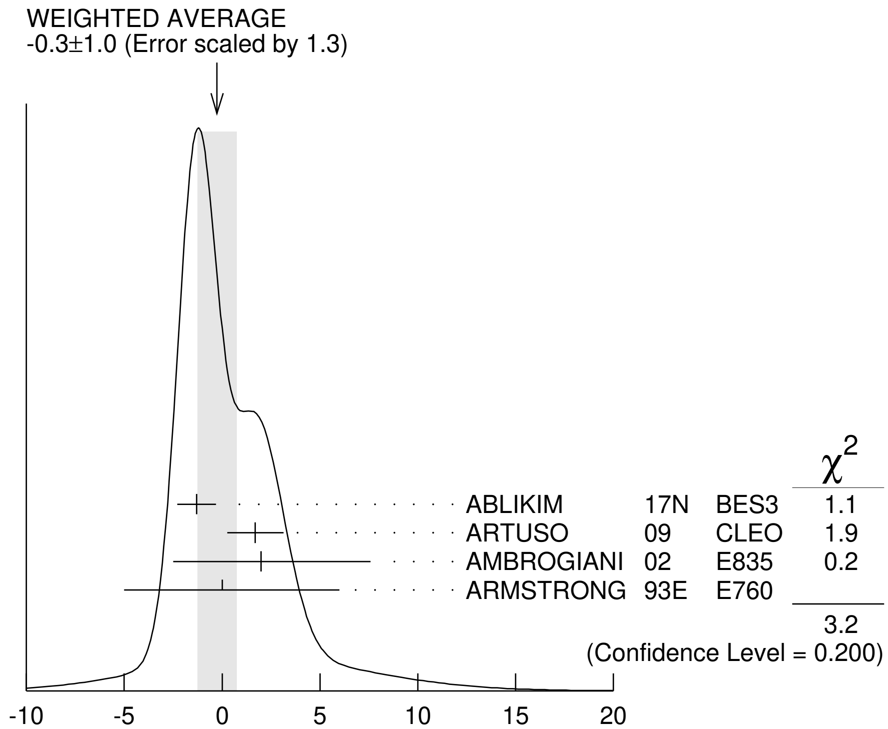
[4] From a fit with floating M2 and E3 amplitudes a_2, b_2, and a_3, and b_3.

$a_3 = E3/\sqrt{E1^2 + M2^2 + E3^2}$ Electric octupole fractional transition amplitude

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
−0.3±1.0 OUR AVERAGE Error includes scale factor of 1.3. See the ideogram below.					
−1.3±0.9±0.4	89k	[1] ABLIKIM	17N	BES3	$\psi(2S) \to \gamma\gamma\ell^+\ell^-$
1.7±1.4±0.3	19.8k	[2] ARTUSO	09	CLEO	$\psi(2S) \to \gamma\gamma\ell^+\ell^-$
$2.0^{+5.5}_{-4.4}\pm0.9$	5908	AMBROGIANI	02	E835	$p\overline{p} \to \chi_{c2} \to J/\psi\gamma$
0^{+6}_{-5}	1904	ARMSTRONG	93E	E760	$p\overline{p} \to \chi_{c2} \to J/\psi\gamma$

[1] Correlated with a_2, b_2, and b_3 with correlation coefficients $\rho_{a_2 a_3} = 0.733$, $\rho_{a_3 b_2} = -0.422$, and $\rho_{a_3 b_3} = -0.024$.

[2] From a fit with floating M2 and E3 amplitudes a_2, b_2, and a_3, and b_3.



$a_3 = E3/\sqrt{E1^2 + M2^2 + E3^2}$ Electric octupole fractional transition amplitude (units 10^{-2})

MULTIPOLE AMPLITUDES IN $\psi(2S) \rightarrow \gamma\chi_{c2}(1P)$ RADIATIVE DECAY

$b_2 = M2/\sqrt{E1^2 + M2^2 + E3^2}$ Magnetic quadrupole fractional transition amplitude

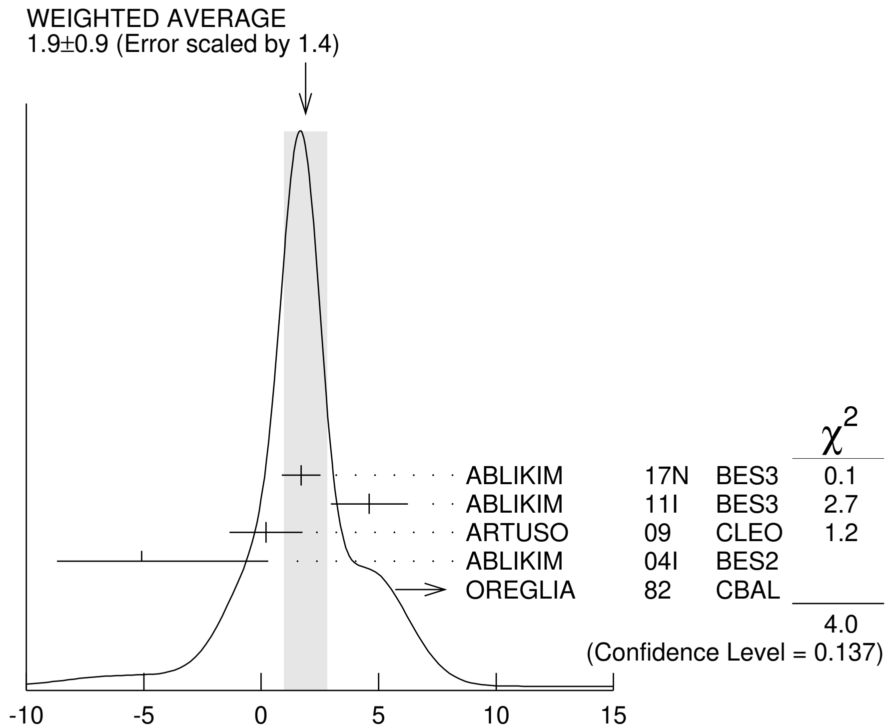
VALUE (units 10^{-2})	EVTS	DOCUMENT ID	TECN	COMMENT
1.9±0.9 OUR AVERAGE		Error includes scale factor of 1.4. See the ideogram below.		
$1.7\pm0.8\pm0.2$	89k	[1] ABLIKIM 17N	BES3	$\psi(2S) \rightarrow \gamma\gamma\ell^+\ell^-$
$4.6\pm1.0\pm1.3$	13.8k	[2] ABLIKIM 11I	BES3	$\psi(2S) \rightarrow \gamma\pi^+\pi^-, \gamma K^+K^-$
$0.2\pm1.5\pm0.4$	19.8k	[3] ARTUSO 09	CLEO	$\psi(2S) \rightarrow \gamma\gamma\ell^+\ell^-$
$-5.1^{+5.4}_{-3.6}$	721	[2] ABLIKIM 04I	BES2	$\psi(2S) \rightarrow \gamma\pi^+\pi^-, \gamma K^+K^-$
$13.2^{+9.8}_{-7.5}$	441	[4] OREGLIA 82	CBAL	$\psi(2S) \rightarrow \gamma\gamma\ell^+\ell^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1.0\pm1.3\pm0.3$	19.8k	[4] ARTUSO 09	CLEO	$\psi(2S) \rightarrow \gamma\gamma\ell^+\ell^-$

[1] Correlated with a_2, a_3, and b_3 with correlation coefficients $\rho_{a_2\,b_2} = -0.605$, $\rho_{a_3\,b_2} = -0.422$, and $\rho_{b_2\,b_3} = 0.384$.

[2] From a fit with floating *M2* and *E3* amplitudes b_2 and b_3.

[3] From a fit with floating *M2* and *E3* amplitudes a_2, b_2, and a_3, and b_3.

[4] From a fit with floating *M2* amplitudes a_2 and b_2, and fixed *E3* amplitudes a_3=b_3=0.



$b_2 = M2/\sqrt{E1^2 + M2^2 + E3^2}$ Magnetic quadrupole fractional transition amplitude (units 10^{-2})

$b_3 = E3/\sqrt{E1^2 + M2^2 + E3^2}$ Electric octupole fractional transition amplitude

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
−1.0±0.6 OUR AVERAGE					
$-1.4\pm0.7\pm0.4$	89k	[1] ABLIKIM	17N	BES3	$\psi(2S) \to \gamma\gamma\ell^+\ell^-$
$1.5\pm0.8\pm1.8$	13.8k	[2] ABLIKIM	11I	BES3	$\psi(2S) \to \gamma\pi^+\pi^-, \gamma K^+K^-$
$-0.8\pm1.2\pm0.2$	19.8k	ARTUSO	09	CLEO	$\psi(2S) \to \gamma\gamma\ell^+\ell^-$
$-2.7^{+4.3}_{-2.9}$	721	[2] ABLIKIM	04I	BES2	$\psi(2S) \to \gamma\pi^+\pi^-, \gamma K^+K^-$

[1] Correlated with a_2, a_3, and b_2 with correlation coefficients $\rho_{a_2 b_3} = -0.095$, $\rho_{a_3 b_3} = -0.024$, and $\rho_{b_2 b_3} = 0.384$.

[2] From a fit with floating *M2* and *E3* amplitudes b_2 and b_3.

MULTIPOLE AMPLITUDE RATIOS IN RADIATIVE DECAYS $\psi(2S) \to \gamma\chi_{c2}(1P)$ and $\chi_{c2} \to \gamma J/\psi(1S)$

b_2/a_2 Magnetic quadrupole transition amplitude ratio

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
$\mathbf{-11^{+14}_{-15}}$	19.8k	[1] ARTUSO	09	CLEO	$\psi(2S) \to \gamma\gamma\ell^+\ell^-$

[1] Statistical and systematic errors combined. From a fit with floating *M2* amplitudes a_2 and b_2, and fixed *E3* amplitudes a_3=b_3=0. Not independent of values for $a_2(\chi_{c2}(1P))$ and $b_2(\chi_{c2}(1P))$ from ARTUSO 09.

$\chi_{c2}(1P)$ REFERENCES

ABLIKIM	25AY	PR D112 012007	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	25BX	PR D112 112015	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	25CE	JHEP 2510 090	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	25CH	CP C49 091001	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	25CJ	CP C49 123001	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	25H	PR D111 012003	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	25I	PR D111 012004	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	25K	PR D111 032001	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	25L	PR D111 032008	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	25R	PR D111 052013	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	25V	PR D111 072001	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	24AC	PR D110 032016	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	24AY	PR D109 L071103	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	24BE	PR D110 032022	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	24BT	PR D110 072009	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	24BW	PR D110 092003	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	24BX	PR D110 112009	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	24CA	PR D110 112013	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	24P	PR D109 072016	M. Ablikim et al.	(BESIII Collab.)
PDG	24	PR D110 030001	S. Navas et al.	(PDG Collab.)
ABLIKIM	23N	JHEP 2305 069	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	23T	PR D107 092004	M. Ablikim et al.	(BESIII Collab.)
SEINO	23	JHEP 2301 160	Y. Seino et al.	(BELLE Collab.)
ABLIKIM	22AO	PR D106 072004	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	22O	JHEP 2206 074	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	22Q	PR D106 032014	M. Ablikim et al.	(BESIII Collab.)
PDG	22	PTEP 2022 083C01	R.L. Workman et al.	(PDG Collab.)
ABLIKIM	21AV	JHEP 2111 217	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	21L	PR D103 112004	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	20AE	PR D102 092006	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	20B	PR D101 012012	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	20I	PR D101 092002	M. Ablikim et al.	(BESIII Collab.)
PDG	20	PTEP 2020 083C01	P.A. Zyla et al.	(PDG Collab.)
ABLIKIM	19AA	PR D99 052008	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	19AU	PR D100 052010	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	19BB	PR D100 092006	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	19J	PR D99 012015	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	19Z	PR D99 051101	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	18V	PR D97 052011	M. Ablikim et al.	(BESIII Collab.)
PDG	18	PR D98 030001	M. Tanabashi et al.	(PDG Collab.)
AAIJ	17BB	EPJ C77 609	R. Aaij et al.	(LHCb Collab.)
AAIJ	17BI	PRL 119 221801	R. Aaij et al.	(LHCb Collab.)
ABLIKIM	17AE	PR D96 092007	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	17AG	PR D96 111102	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	17AI	PR D96 112006	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	17I	PRL 118 221802	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	17N	PR D95 072004	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	17U	PR D96 032001	M. Ablikim et al.	(BESIII Collab.)
PDG	16	CP C40 100001	C. Patrignani et al.	(PDG Collab.)
ABLIKIM	15I	PR D91 092006	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	15M	PR D91 112008	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	15N	PR D91 112018	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	14J	PR D89 074030	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	13B	PR D87 012002	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	13D	PR D87 012007	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	13H	PR D87 032007	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	13V	PR D88 112001	M. Ablikim et al.	(BESIII Collab.)
UEHARA	13	PTEP 2013 123C01	S. Uehara et al.	(BELLE Collab.)
ABLIKIM	12A	PR D85 112008	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	12I	PR D86 052004	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	12J	PR D86 052011	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	12O	PRL 109 172002	M. Ablikim et al.	(BESIII Collab.)
LEES	12AE	PR D86 092005	J.P. Lees et al.	(BABAR Collab.)
LIU	12B	PRL 108 232001	Z.Q. Liu et al.	(BELLE Collab.)
ABLIKIM	11A	PR D83 012006	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	11E	PR D83 112005	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	11F	PR D83 112009	M. Ablikim et al.	(BESIII Collab.)
ABLIKIM	11I	PR D84 092006	M. Ablikim et al.	(BESIII Collab.)

ABLIKIM	11K	PRL 107 092001	M. Ablikim *et al.*	(BESIII Collab.)
DEL-AMO-SA...	11M	PR D84 012004	P. del Amo Sanchez *et al.*	(BABAR Collab.)
ABLIKIM	10A	PR D81 052005	M. Ablikim *et al.*	(BESIII Collab.)
ONYISI	10	PR D82 011103	P.U.E. Onyisi *et al.*	(CLEO Collab.)
UEHARA	10A	PR D82 114031	S. Uehara *et al.*	(BELLE Collab.)
ARTUSO	09	PR D80 112003	M. Artuso *et al.*	(CLEO Collab.)
ASNER	09	PR D79 072007	D.M. Asner *et al.*	(CLEO Collab.)
UEHARA	09	PR D79 052009	S. Uehara *et al.*	(BELLE Collab.)
BENNETT	08A	PRL 101 151801	J.V. Bennett *et al.*	(CLEO Collab.)
ECKLUND	08A	PR D78 091501	K.M. Ecklund *et al.*	(CLEO Collab.)
HE	08B	PR D78 092004	Q. He *et al.*	(CLEO Collab.)
MENDEZ	08	PR D78 011102	H. Mendez *et al.*	(CLEO Collab.)
NAIK	08	PR D78 031101	P. Naik *et al.*	(CLEO Collab.)
UEHARA	08	EPJ C53 1	S. Uehara *et al.*	(BELLE Collab.)
ADAMS	07	PR D75 071101	G.S. Adams *et al.*	(CLEO Collab.)
ATHAR	07	PR D75 032002	S.B. Athar *et al.*	(CLEO Collab.)
CHEN	07B	PL B651 15	W.T. Chen *et al.*	(BELLE Collab.)
ABLIKIM	06D	PR D73 052006	M. Ablikim *et al.*	(BES Collab.)
ABLIKIM	06I	PR D74 012004	M. Ablikim *et al.*	(BES Collab.)
ABLIKIM	06R	PR D74 072001	M. Ablikim *et al.*	(BES Collab.)
ABLIKIM	06T	PL B642 197	M. Ablikim *et al.*	(BES Collab.)
DOBBS	06	PR D73 071101	S. Dobbs *et al.*	(CLEO Collab.)
ABLIKIM	05G	PR D71 092002	M. Ablikim *et al.*	(BES Collab.)
ABLIKIM	05N	PL B630 7	M. Ablikim *et al.*	(BES Collab.)
ABLIKIM	05O	PL B630 21	M. Ablikim *et al.*	(BES Collab.)
ADAM	05A	PRL 94 232002	N.E. Adam *et al.*	(CLEO Collab.)
ANDREOTTI	05A	NP B717 34	M. Andreotti *et al.*	(FNAL E835 Collab.)
NAKAZAWA	05	PL B615 39	H. Nakazawa *et al.*	(BELLE Collab.)
ABLIKIM	04B	PR D70 012003	M. Ablikim *et al.*	(BES Collab.)
ABLIKIM	04H	PR D70 092003	M. Ablikim *et al.*	(BES Collab.)
ABLIKIM	04I	PR D70 092004	M. Ablikim *et al.*	(BES Collab.)
BAI	04F	PR D69 092001	J.Z. Bai *et al.*	(BES Collab.)
BAI	04I	PR D70 012006	J.Z. Bai *et al.*	(BES Collab.)
AULCHENKO	03	PL B573 63	V.M. Aulchenko *et al.*	(KEDR Collab.)
BAI	03C	PR D67 032004	J.Z. Bai *et al.*	(BES Collab.)
BAI	03E	PR D67 112001	J.Z. Bai *et al.*	(BES Collab.)
ABE	02T	PL B540 33	K. Abe *et al.*	(BELLE Collab.)
AMBROGIANI	02	PR D65 052002	M. Ambrogiani *et al.*	(FNAL E835 Collab.)
EISENSTEIN	01	PRL 87 061801	B.I. Eisenstein *et al.*	(CLEO Collab.)
AMBROGIANI	00B	PR D62 052002	M. Ambrogiani *et al.*	(FNAL E835 Collab.)
ACCIARRI	99E	PL B453 73	M. Acciarri *et al.*	(L3 Collab.)
BAI	99B	PR D60 072001	J.Z. Bai *et al.*	(BES Collab.)
ACKER..,K...	98	PL B439 197	K. Ackerstaff *et al.*	(OPAL Collab.)
BAI	98D	PR D58 092006	J.Z. Bai *et al.*	(BES Collab.)
BAI	98I	PRL 81 3091	J.Z. Bai *et al.*	(BES Collab.)
DOMINICK	94	PR D50 4265	J. Dominick *et al.*	(CLEO Collab.)
ARMSTRONG	93	PRL 70 2988	T.A. Armstrong *et al.*	(FNAL E760 Collab.)
ARMSTRONG	93E	PR D48 3037	T.A. Armstrong *et al.*	(FNAL-E760 Collab.)
BAUER	93	PL B302 345	D.A. Bauer *et al.*	(TPC Collab.)
ARMSTRONG	92	NP B373 35	T.A. Armstrong *et al.*	(FNAL, FERR, GENO+)
Also		PRL 68 1468	T.A. Armstrong *et al.*	(FNAL, FERR, GENO+)
BAGLIN	87B	PL B187 191	C. Baglin *et al.*	(R704 Collab.)
BAGLIN	86B	PL B172 455	C. Baglin	(LAPP, CERN, GENO, LYON, OSLO+)
GAISER	86	PR D34 711	J. Gaiser *et al.*	(Crystal Ball Collab.)
LEE	85	SLAC 282	R.A. Lee	(SLAC)
LEMOIGNE	82	PL 113B 509	Y. Lemoigne *et al.*	(SACL, LOIC, SHMP+)
OREGLIA	82	PR D25 2259	M.J. Oreglia *et al.*	(SLAC, CIT, HARV+)
Also		Private Comm.	M.J. Oreglia	(EFI)
BARATE	81	PR D24 2994	R. Barate *et al.*	(SACL, LOIC, SHMP, CERN+)
HIMEL	80	PRL 44 920	T. Himel *et al.*	(LBL, SLAC)
Also		Private Comm.	G. Trilling	(LBL, UCB)
BRANDELIK	79B	NP B160 426	R. Brandelik *et al.*	(DASP Collab.)
BARTEL	78B	PL 79B 492	W. Bartel *et al.*	(DESY, HEIDP)
TANENBAUM	78	PR D17 1731	W.M. Tanenbaum *et al.*	(SLAC, LBL)
Also		Private Comm.	G. Trilling	(LBL, UCB)
BIDDICK	77	PRL 38 1324	C.J. Biddick *et al.*	(UCSD, UMD, PAVI+)
WHITAKER	76	PRL 37 1596	J.S. Whitaker *et al.*	(SLAC, LBL)