$\chi_{c1}(1P)$

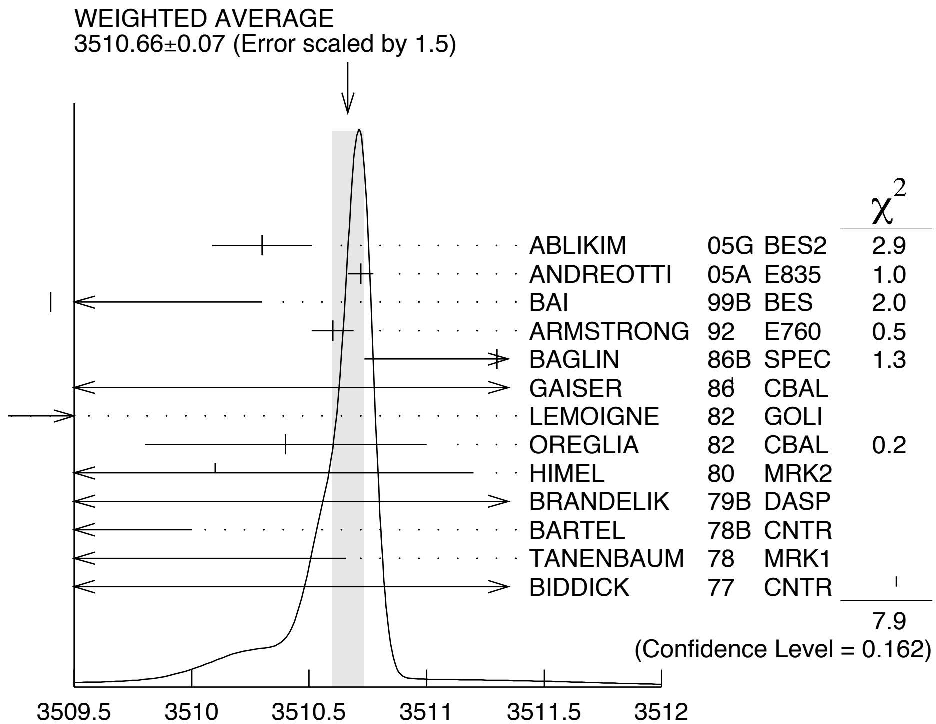
$I^G(J^{PC}) = 0^+(1^{++})$

See the Review on "$\psi(2S)$ and χ_c branching ratios" before the $\chi_{c0}(1P)$ Listings.

$\chi_{c1}(1P)$ MASS

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
3510.66 ± 0.07 OUR AVERAGE		Error includes scale factor of 1.5. See the ideogram below.			
3510.30 ± 0.14 ± 0.16		ABLIKIM	05G	BES2	$\psi(2S) \to \gamma\chi_{c1}$
3510.719 ± 0.051 ± 0.019		ANDREOTTI	05A	E835	$p\overline{p} \to e^+e^-\gamma$
3509.4 ± 0.9		BAI	99B	BES	$\psi(2S) \to \gamma X$
3510.60 ± 0.087 ± 0.019	513	[1] ARMSTRONG	92	E760	$\overline{p}p \to e^+e^-\gamma$
3511.3 ± 0.4 ± 0.4	30	BAGLIN	86B	SPEC	$\overline{p}p \to e^+e^-X$
3512.3 ± 0.3 ± 4.0		[2] GAISER	86	CBAL	$\psi(2S) \to \gamma X$
3507.4 ± 1.7	91	[3] LEMOIGNE	82	GOLI	185 π^- Be $\to \gamma\mu^+\mu^-$ A
3510.4 ± 0.6		OREGLIA	82	CBAL	$e^+e^- \to J/\psi 2\gamma$
3510.1 ± 1.1	254	[4] HIMEL	80	MRK2	$e^+e^- \to J/\psi 2\gamma$
3509 ± 11	21	BRANDELIK	79B	DASP	$e^+e^- \to J/\psi 2\gamma$
3507 ± 3		[4] BARTEL	78B	CNTR	$e^+e^- \to J/\psi 2\gamma$
3505.0 ± 4 ± 4		[4,5] TANENBAUM	78	MRK1	e^+e^-
3513 ± 7	367	[4] BIDDICK	77	CNTR	$\psi(2S) \to \gamma X$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
3500 ± 10	40	TANENBAUM	75	MRK1	Hadrons γ

[1] Recalculated by ANDREOTTI 05A, using the value of $\psi(2S)$ mass from AULCHENKO 03.
[2] Using mass of $\psi(2S)$ = 3686.0 MeV.
[3] $J/\psi(1S)$ mass constrained to 3097 MeV.
[4] Mass value shifted by us by amount appropriate for $\psi(2S)$ mass = 3686 MeV and $J/\psi(1S)$ mass = 3097 MeV.
[5] From a simultaneous fit to radiative and hadronic decay channels.



$\chi_{c1}(1P)$ mass (MeV)

$\chi_{c1}(1P)$ WIDTH

VALUE (MeV)	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
0.89 ±0.05 OUR FIT						
0.88 ±0.05 OUR AVERAGE						
$1.39\ ^{+0.40}_{-0.38}\ ^{+0.26}_{-0.77}$			ABLIKIM	05G	BES2	$\psi(2S) \rightarrow \gamma \chi_{c1}$
$0.876 \pm 0.045 \pm 0.026$			ANDREOTTI	05A	E835	$p\overline{p} \rightarrow e^+ e^- \gamma$
$0.87 \pm 0.11 \pm 0.08$		513	[6] ARMSTRONG	92	E760	$\overline{p}p \rightarrow e^+ e^- \gamma$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<1.3	95		BAGLIN	86B	SPEC	$\overline{p}p \rightarrow e^+ e^- X$
<3.8	90		GAISER	86	CBAL	$\psi(2S) \rightarrow \gamma X$

[6] Recalculated by ANDREOTTI 05A.

$\chi_{c1}(1P)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)	Scale factor/ Confidence level

Hadronic decays

Γ_1	$3(\pi^+\pi^-)$	$(5.8\pm1.4)\times10^{-3}$	S=1.2
Γ_2	$2(\pi^+\pi^-)$	$(7.6\pm2.6)\times10^{-3}$	
Γ_3	$\pi^+\pi^-K^+K^-$	$(4.5\pm1.0)\times10^{-3}$	
Γ_4	$\rho^0\pi^+\pi^-$	$(3.9\pm3.5)\times10^{-3}$	
Γ_5	$K^+\overline{K}^*(892)^0\pi^-$ + c.c.	$(3.2\pm2.1)\times10^{-3}$	
Γ_6	$K^*(892)^0\overline{K}^*(892)^0$	$(1.6\pm0.4)\times10^{-3}$	
Γ_7	$K^0_SK^+\pi^-$ + c.c.	$(2.3\pm0.7)\times10^{-3}$	
Γ_8	$\pi^+\pi^-K^0_SK^0_S$	$(7.7\pm3.3)\times10^{-4}$	
Γ_9	$K^+K^-K^0_SK^0_S$		
Γ_{10}	$\pi^+\pi^-p\overline{p}$	$(4.9\pm1.9)\times10^{-4}$	
Γ_{11}	$K^+K^-K^+K^-$	$(3.9\pm1.7)\times10^{-4}$	
Γ_{12}	$p\overline{p}$	$(6.7\pm0.5)\times10^{-5}$	
Γ_{13}	$\Lambda\overline{\Lambda}$	$(2.4\pm1.0)\times10^{-4}$	
Γ_{14}	$\Lambda\overline{\Lambda}\pi^+\pi^-$	$< 1.5\times10^{-3}$	CL=90%
Γ_{15}	$K^0_SK^0_Sp\overline{p}$	$< 4.5\times10^{-4}$	CL=90%
Γ_{16}	$\Xi^-\overline{\Xi}^+$	$< 3.4\times10^{-4}$	CL=90%
Γ_{17}	$\pi^+\pi^-$ + K^+K^-	$< 2.1\times10^{-3}$	
Γ_{18}	$K^0_SK^0_S$	$< 7\times10^{-5}$	CL=90%

Radiative decays

Γ_{19}	$\gamma J/\psi(1S)$	(35.6 ± 1.9) %	
Γ_{20}	$\gamma\gamma$		

$\chi_{c1}(1P)$ PARTIAL WIDTHS

$\chi_{c1}(1P)$ $\Gamma(i)\Gamma(\gamma J/\psi(1S))/\Gamma(\text{total})$

$\Gamma(p\overline{p})\times\Gamma(\gamma J/\psi(1S))/\Gamma_{\text{total}}$ $\Gamma_{12}\Gamma_{19}/\Gamma$

VALUE (eV)	DOCUMENT ID		TECN	COMMENT
21.3±0.9 OUR FIT				
21.4±0.9 OUR AVERAGE				
$21.5\pm0.5\pm0.8$	[7] ANDREOTTI	05A	E835	$p\overline{p}\rightarrow e^+e^-\gamma$
$21.4\pm1.5\pm2.2$	[7,8] ARMSTRONG	92	E760	$\overline{p}p\rightarrow e^+e^-\gamma$
$19.9^{+4.4}_{-4.0}$	[7] BAGLIN	86B	SPEC	$\overline{p}p\rightarrow e^+e^-X$

[7] Calculated by us using $B(J/\psi(1S)\rightarrow e^+e^-) = 0.0593\pm0.0010$.
[8] Recalculated by ANDREOTTI 05A.

$\chi_{c1}(1P)$ BRANCHING RATIOS

HADRONIC DECAYS

$\Gamma(3(\pi^+\pi^-))/\Gamma_{total}$ — Γ_1/Γ

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
5.8±1.4 OUR EVALUATION Error includes scale factor of 1.2. Treating systematic error as correlated.				
5.8±1.1 OUR AVERAGE				
5.4±0.7±0.9	[9] BAI	99B	BES	$\psi(2S) \to \gamma\chi_{c1}$
15.9±5.9±0.8	[9] TANENBAUM	78	MRK1	$\psi(2S) \to \gamma\chi_{c1}$

$\Gamma(2(\pi^+\pi^-))/\Gamma_{total}$ — Γ_2/Γ

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
7.6±2.6 OUR EVALUATION Treating systematic error as correlated.				
8 ±4 OUR AVERAGE Error includes scale factor of 1.5.				
4.6±2.0±2.6	[9] BAI	99B	BES	$\psi(2S) \to \gamma\chi_{c1}$
12.4±4.1±0.6	[9] TANENBAUM	78	MRK1	$\psi(2S) \to \gamma\chi_{c1}$

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

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
4.5±1.0 OUR EVALUATION Treating systematic error as correlated.				
4.5±0.9 OUR AVERAGE				
4.2±0.4±0.9	[9] BAI	99B	BES	$\psi(2S) \to \gamma\chi_{c1}$
7.3±3.0±0.4	[9] TANENBAUM	78	MRK1	$\psi(2S) \to \gamma\chi_{c1}$

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

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
39±35	[10] TANENBAUM	78	MRK1	$\psi(2S) \to \gamma\chi_{c1}$

$\Gamma(K^+\overline{K}^*(892)^0\pi^- + \text{c.c.})/\Gamma_{total}$ — Γ_5/Γ

VALUE (units 10^{-4})	DOCUMENT ID		TECN	COMMENT
32±21	[10] TANENBAUM	78	MRK1	$\psi(2S) \to \gamma\chi_{c1}$

$\Gamma(K^*(892)^0\overline{K}^*(892)^0)/\Gamma_{total}$ — Γ_6/Γ

VALUE (units 10^{-3})	EVTS	DOCUMENT ID		TECN	COMMENT
1.6±0.4±0.1	28.4 ± 5.5	[11,12] ABLIKIM	04H	BES	$\psi(2S) \to \gamma K^+ K^- \pi^+ \pi^-$

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

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
2.3±0.4±0.6	[9] BAI	99B	BES	$\psi(2S) \to \gamma\chi_{c1}$

$\Gamma(\pi^+\pi^- K^0_S K^0_S)/\Gamma_{total}$ — Γ_8/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
7.7±3.2±0.4	19.8 ± 7.7	[13] ABLIKIM	05O	BES2	$\psi(2S) \to \chi_{c1}\gamma$

$\Gamma(K^+K^- K^0_S K^0_S)/\Gamma_{total}$ — Γ_9/Γ

VALUE (units 10^{-4})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
<5	90	3.2 ± 2.4	[14] ABLIKIM	05O	BES2	$\psi(2S) \to \chi_{c1}\gamma$

$\Gamma(\pi^+\pi^- p\overline{p})/\Gamma_{total}$ — Γ_{10}/Γ

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.49±0.19 OUR EVALUATION	Treating systematic error as correlated.			
0.50±0.19 OUR AVERAGE				
0.46±0.12±0.15	[9] BAI	99B	BES	$\psi(2S) \to \gamma\chi_{c1}$
1.07±0.76±0.05	[9] TANENBAUM	78	MRK1	$\psi(2S) \to \gamma\chi_{c1}$

$\Gamma(K^+K^-K^+K^-)/\Gamma_{total}$ — Γ_{11}/Γ

VALUE (units 10^{-3})	DOCUMENT ID		TECN	COMMENT
0.39±0.14±0.10	[9] BAI	99B	BES	$\psi(2S) \to \gamma\chi_{c1}$

$\Gamma(p\overline{p})/\Gamma_{total}$ — Γ_{12}/Γ

VALUE (units 10^{-4})	DOCUMENT ID
0.67±0.05 OUR FIT	

$\Gamma(\Lambda\overline{\Lambda})/\Gamma_{total}$ — Γ_{13}/Γ

VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
2.4±0.9±0.5	$9.0^{+3.5}_{-3.1}$	[9] BAI	03E	BES	$\psi(2S) \to \gamma\chi_{c1} \to \gamma\Lambda\overline{\Lambda}$

$\Gamma(\Lambda\overline{\Lambda}\pi^+\pi^-)/\Gamma_{total}$ — Γ_{14}/Γ

VALUE (units 10^{-3})	CL%	DOCUMENT ID		TECN	COMMENT
<1.5	90	[15] ABLIKIM	06D	BES2	$\psi(2S) \to \gamma\chi_{c1}$

$\Gamma(K^0_S K^0_S p\overline{p})/\Gamma_{total}$ — Γ_{15}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<4.5	90	[15] ABLIKIM	06D	BES2	$\psi(2S) \to \gamma\chi_{c1}$

$\Gamma(\Xi^-\overline{\Xi}^+)/\Gamma_{total}$ — Γ_{16}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<3.4	90	[15] ABLIKIM	06D	BES2	$\psi(2S) \to \gamma\chi_{c1}$

$[\Gamma(\pi^+\pi^-)+\Gamma(K^+K^-)]/\Gamma_{total}$ — Γ_{17}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<21		[10] FELDMAN	77	MRK1	$\psi(2S) \to \gamma\chi_{c1}$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<38	90	[10] BRANDELIK	79B	DASP	$\psi(2S) \to \gamma\chi_{c1}$

$\Gamma(K^0_S K^0_S)/\Gamma_{total}$ — Γ_{18}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
<0.7	90	[16] ABLIKIM	05O	BES2	$\psi(2S) \to \chi_{c1}\gamma$

[9] Rescaled by us using $B(\psi(2S) \rightarrow \gamma\chi_{c1}) = (8.7 \pm 0.4)\%$ and $B(\psi(2S) \rightarrow J/\psi(1S)\pi^+\pi^-) = 0.318 \pm 0.006$.

[10] Estimated using $B(\psi(2S) \rightarrow \gamma\chi_{c1}(1P)) = 0.087$. The errors do not contain the uncertainty in the $\psi(2S)$ decay.

[11] ABLIKIM 04H reports $[B(\chi_{c1}(1P) \rightarrow K^*(892)^0 \overline{K}^*(892)^0) \times B(\psi(2S) \rightarrow \gamma\chi_{c1}(1P))] = (1.40 \pm 0.27 \pm 0.22) \times 10^{-4}$. We divide by our best value $B(\psi(2S) \rightarrow \gamma\chi_{c1}(1P)) = (8.7 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

[12] Assumes $B(K^*(892)^0 \rightarrow K^-\pi^+) = 2/3$.

[13] ABLIKIM 05O reports $[B(\chi_{c1}(1P) \rightarrow \pi^+\pi^- K^0_S K^0_S) \times B(\psi(2S) \rightarrow \gamma\chi_{c1}(1P))] = (0.67 \pm 0.26 \pm 0.11) \times 10^{-4}$. We divide by our best value $B(\psi(2S) \rightarrow \gamma\chi_{c1}(1P)) = (8.7 \pm 0.4) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

[14] ABLIKIM 05O reports $[B(\chi_{c1}(1P) \rightarrow K^+K^- K^0_S K^0_S) \times B(\psi(2S) \rightarrow \gamma\chi_{c1}(1P))] = < 4.2 \times 10^{-5}$. We divide by our best value $B(\psi(2S) \rightarrow \gamma\chi_{c1}(1P)) = 0.087$.

[15] Using $B(\psi(2S) \rightarrow \chi_{c1}\gamma)$ $(9.1 \pm 0.6)\%$.

[16] ABLIKIM 05O reports $[B(\chi_{c1}(1P) \rightarrow K^0_S K^0_S) \times B(\psi(2S) \rightarrow \gamma\chi_{c1}(1P))] = < 0.6 \times 10^{-5}$. We divide by our best value $B(\psi(2S) \rightarrow \gamma\chi_{c1}(1P)) = 0.087$.

RADIATIVE DECAYS

$\Gamma(\gamma J/\psi(1S))/\Gamma_{total}$ — Γ_{19}/Γ

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
0.356±0.019 OUR FIT				
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.379±0.008±0.021	[17] ADAM	05A	CLEO	$e^+e^- \rightarrow \psi(2S) \rightarrow \gamma\chi_{c1}$

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

VALUE	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.0015	90	[18] YAMADA	77	DASP	$e^+e^- \rightarrow 3\gamma$

[17] Uses $B(\psi(2S) \rightarrow \gamma\chi_{c1} \rightarrow \gamma\gamma J/\psi)$ from ADAM 05A and $B(\psi(2S) \rightarrow \gamma\chi_{c1})$ from ATHAR 04.

[18] Estimated using $B(\psi(2S) \rightarrow \gamma\chi_{c1}(1P)) = 0.087$. The errors do not contain the uncertainty in the $\psi(2S)$ decay.

$\chi_{c1}(1P)$ CROSS-PARTICLE BRANCHING RATIOS

$$B(\chi_{c1}(1P) \rightarrow p\overline{p}) \times \frac{\Gamma(\psi(2S) \rightarrow \gamma\chi_{c1}(1P))}{\Gamma(\psi(2S) \rightarrow J/\psi(1S)\pi^+\pi^-)}$$

VALUE (units 10^{-5})	*DOCUMENT ID*		*TECN*	*COMMENT*
1.85±0.20 OUR FIT				
1.1 ±1.0	[19] BAI	98I	BES	$\psi(2S) \rightarrow \gamma\chi_{c1} \rightarrow \gamma\overline{p}p$

$B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) \times B(\psi(2S) \to \gamma \chi_{c1}(1P))$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
3.11±0.08 OUR FIT					
2.70±0.13 OUR AVERAGE					
2.81±0.05±0.23	13k	BAI	04I	BES2	$\psi(2S) \to J/\psi\gamma\gamma$
2.56±0.12±0.20		GAISER	86	CBAL	$\psi(2S) \to \gamma X$
2.78±0.30		[20] OREGLIA	82	CBAL	$\psi(2S) \to \gamma\chi_{c1}$
2.2 ±0.5		[21] BRANDELIK	79B	DASP	$\psi(2S) \to \gamma\chi_{c1}$
2.9 ±0.5		[21] BARTEL	78B	CNTR	$\psi(2S) \to \gamma\chi_{c1}$
5.0 ±1.5		[22] BIDDICK	77	CNTR	$e^+e^- \to \gamma X$
2.8 ±0.9		[20] WHITAKER	76	MRK1	e^+e^-
• • • We do not use the following data for averages, fits, limits, etc. • • •					
3.44±0.06±0.13	3.7k	[23] ADAM	05A	CLEO	$\psi(2S) \to J/\psi\gamma\gamma$

$B(\chi_{c1}(1P) \to \gamma J/\psi) \times \frac{\Gamma(\psi(2S) \to \gamma\chi_{c1}(1P))}{\Gamma(\psi(2S) \to J/\psi(1S) anything)}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
5.54±0.09 OUR FIT					
5.77±0.10±0.12	3.7k	ADAM	05A	CLEO	$\psi(2S) \to J/\psi\gamma\gamma$

$B(\chi_{c1}(1P) \to \gamma J/\psi(1S)) \times \frac{\Gamma(\psi(2S) \to \gamma\chi_{c1}(1P))}{\Gamma(\psi(2S) \to J/\psi(1S)\pi^+\pi^-)}$

VALUE (units 10^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
9.77±0.35 OUR FIT					
9.5 ±1.8 OUR AVERAGE					
12.6 ±0.3 ±3.8	3k	[24] ABLIKIM	04B	BES	$\psi(2S) \to J/\psi X$
8.5 ±2.1		[25] HIMEL	80	MRK2	$\psi(2S) \to \gamma\chi_{c1}$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
10.24±0.17±0.23	3.7k	[23] ADAM	05A	CLEO	$\psi(2S) \to J/\psi\gamma\gamma$

$B(\chi_{c1}(1P) \to p\overline{p}) \times B(\psi(2S) \to \gamma\chi_{c1}(1P))$

VALUE (units 10^{-6})	EVTS	DOCUMENT ID		TECN	COMMENT
5.9±0.6 OUR FIT					
$4.8^{+1.4}_{-1.3}$±0.6	$18.2^{+5.5}_{-4.9}$	BAI	04F	BES	$\psi(2S) \to \gamma\chi_{c1}(1P) \to \gamma\overline{p}p$

[19] Calculated by us. The value for $B(\chi_{c1} \to p\overline{p})$ reported in BAI 98I is derived using $B(\psi(2S) \to \gamma\chi_{c1}) = (8.7 \pm 0.8)\%$ and $B(\psi(2S) \to J/\psi(1S)\pi^+\pi^-) = (32.4 \pm 2.6)\%$ [BAI 98D].

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

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

[22] Assumes isotropic gamma distribution.

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

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

[25] The value for $B(\psi(2S) \to \gamma\chi_{c1}) \times B(\chi_{c1} \to \gamma J/\psi(1S))$ quoted 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 $B(J/\psi(1S) \to \ell^+\ell^-) = 0.1181 \pm 0.0020$.

MULTIPOLE AMPLITUDES IN $\chi_{c1}(1P) \rightarrow \gamma J/\psi(1S)$

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

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
$\mathbf{-0.002^{+0.008}_{-0.017}}$ **OUR AVERAGE**					
$0.002 \pm 0.032 \pm 0.004$	2090	AMBROGIANI	02	E835	$p\overline{p} \rightarrow \chi_{c1} \rightarrow J/\psi\gamma$
$-0.002^{+0.008}_{-0.020}$	921	OREGLIA	82	CBAL	$\psi(2S) \rightarrow \chi_{c1}\gamma \rightarrow J/\psi\gamma\gamma$

$\chi_{c1}(1P)$ REFERENCES

ABLIKIM	06D	PR D73 052006	M. Ablikim *et al.*	(BES Collab.)
ABLIKIM	05G	PR D71 092002	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.)
ABLIKIM	04B	PR D70 012003	M. Ablikim *et al.*	(BES Collab.)
ABLIKIM	04H	PR D70 092003	M. Ablikim *et al.*	(BES Collab.)
ATHAR	04	PR D70 112002	S.B. Athar *et al.*	(CLEO 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	03E	PR D67 112001	J.Z. Bai *et al.*	(BES Collab.)
AMBROGIANI	02	PR D65 052002	M. Ambrogiani *et al.*	(FNAL E835 Collab.)
BAI	99B	PR D60 072001	J.Z. Bai *et al.*	(BES 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.)
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	86B	PL B172 455	C. Baglin	(LAPP, CERN, GENO, LYON, OSLO+)
GAISER	86	PR D34 711	J. Gaiser *et al.*	(Crystal Ball Collab.)
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)
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)
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