Page 1

NODE=M176

NODE=M176

 $\chi_{c1}(3872)$

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

also known as X(3872)

This state shows properties different from a conventional $q \overline{q}$ state. A candidate for an exotic structure. See the review on non- $q \overline{q}$ states.

First observed by CHOI 03 in $B \rightarrow K \pi^+ \pi^- J/\psi(1S)$ decays as a narrow peak in the invariant mass distribution of the $\pi^+\pi^- J/\psi(1S)$ final state. Isovector hypothesis excluded by AUBERT 05B and CHOI 11.

AAIJ 13Q perform a full five-dimensional amplitude analysis of the angular correlations between the decay products in B^+ ightarrow $\chi_{c1}(3872) \, K^+$ decays, where $\chi_{c1}(3872) \rightarrow J/\psi \pi^+ \pi^-$ and $J/\psi \rightarrow$ $\mu^+\mu^-$, which unambiguously gives the $J^{PC} = 1^{++}$ assignment under the assumption that the $\pi^+\pi^-$ and J/ψ are in an S-wave. AAIJ 15AO extend this analysis with more data to limit D-wave contributions to < 4% at 95% CL.

See the review on "Spectroscopy of Mesons Containing Two Heavy Quarks."

χ_{c1} (3872) MASS FROM $J/\psi X$ MODE

VALUE (MeV) EVTS DOCUMENT ID COMMENT TECN 3871.64 \pm 0.06 OUR AVERAGE NEW $[3871.65 \pm 0.06 \text{ MeV OUR 2023 AVERAGE}]$ $e^+e^- \rightarrow$ $3870.2 \ \pm \ 0.7 \ \pm 0.3$ 24.6 ABLIKIM 23W BES3 $J/\psi(1S)\pi^+\pi$ ¹ AAIJ OCCUR=2 $3871.64 \pm 0.06 \pm 0.01 \quad 19.8k$ 20S LHCB B⁺ $J/\psi \pi^+ \pi^ 3871.9 \pm 0.7 \pm 0.2$ 20 ABLIKIM BES3 14 $J/\psi \pi^+ \pi^$ $pp \rightarrow J/\psi \pi^+ \pi^- X$ $3871.95~\pm~0.48~\pm0.12$ 0.6k AAIJ 12H LHCB ² CHOI $3871.85 \pm 0.27 \pm 0.19$ BELL $B \rightarrow K \pi^+ \pi^- J/\psi$ 170 11 $^{+}_{-}$ 1.8 $^{-}_{-}$ 1.6 ³ DEL-AMO-SA...10B BABR $B \rightarrow \omega J/\psi K$ 27 3873 ± 1.3 ^{3,4} AALTONEN $3871.61 \pm 0.16 \pm 0.19$ 6k 09AU CDF2 $p\overline{p} \rightarrow J/\psi \pi^+ \pi^- X$ B+ - $3871.4 \ \pm \ 0.6 \ \pm 0.1$ AUBERT 08Y BABR 93.4 $K^+ J/\psi \pi^+ \pi$ 08Y BABR B⁰ OCCUR=2 $3868.7 \pm 1.5 \pm 0.4$ 9.4 AUBERT $J/\psi \pi^+ \pi^-$ ^{3,5} ABAZOV $3871.8 \ \pm \ 3.1 \ \pm 3.0$ 522 04F D0 $p\overline{p} \rightarrow J/\psi \pi^+ \pi^- X$ • • • We do not use the following data for averages, fits, limits, etc. • • 23AP LHCB **B**⁰ $3871.57\ \pm\ 0.09$ 155 ⁶ AAIJ \rightarrow $J/\psi 2(\pi^{+}\pi^{-})$ ⁷ AAIJ $3871.695 \pm 0.067 \pm 0.068$ 15.6k 20AD LHCB $pp \rightarrow J/\psi \pi^+ \pi^- X$ ⁸ AAIJ $3871.59~\pm~0.06~\pm0.03$ 4.2k 20s LHCB $B^+ \rightarrow$ $J/\psi \pi^+ \pi^- K^+$ ⁹ ABLIKIM $e^+e^- \rightarrow \gamma \omega J/\psi$ 45 19V BES $3873.3 \ \pm \ 1.1 \ \pm 1.0$ ^{3,10} AGHASYAN COMP $\gamma^* N \rightarrow X \pi^{\pm} N'$ 18A 3860.0 ± 10.4 13.6 ¹¹ AUBERT BABR B⁰ 3868.6 ± 1.2 8 06 ± 0.2 ¹¹ AUBERT 61 OCCUR=2 $3871.3 0.6 $ ± 0.1 06 BABR B ¹² AUBERT 05r BABR B^+ 3873.4 ± 1.4 25 $K^+ J/\psi \pi^+ \pi^-$ ^{3,13} ACOSTA $3871.3 \hspace{0.2cm} \pm \hspace{0.2cm} 0.7$ ± 0.4 730 04 CDF2 $p\overline{p} \rightarrow J/\psi \pi^+ \pi^- X$ ¹⁴ CHOI 3872.0 \pm 0.6 ± 0.5 36 03 BELL $B \rightarrow K \pi^+ \pi^- J/\psi$ ^{3,15} ANTONIAZZI 94 $300 \begin{array}{c} \pi^{\pm} \text{Li} \rightarrow \\ J/\psi \pi^{+} \pi^{-} X \end{array}$ 3836 ± 13 58 E705

NODE=M176M

NODE=M176M

- $^1\,{\rm Calculated}$ from $m_{\chi_{c1}(3872)}$ $m_{\psi(2S)}$ = 185.54 \pm 0.06 MeV obtained by combining the data with $\chi_{c1}(3872)$ produced in B^+ decays from AAIJ 20S and inclusive *b*-hadron decays from AAIJ 20AD and using $m_{\psi(2S)} = 3686.097$ MeV. Breit-Wigner parametriza-
- $^2{\rm The}$ mass difference for the $\chi_{c1}(3872)$ produced in B^+ and B^0 decays is (-0.71 \pm 0.96 \pm 0.19) MeV.

 $^3\ensuremath{\mathsf{Width}}$ consistent with detector resolution.

- 4 A possible equal mixture of two states with a mass difference greater than 3.6 MeV/c² 5 sexcluded at 95% CL. 5 Calculated from the corresponding $m_{\chi_{c1}(3872)} - m_{J/\psi}$ using $m_{J/\psi}$ =3096.916 MeV.
- 6 From a fit of a relativistic S-wave Breit-Wigner convolved with the detector resolution. The width of $\chi_{c1}(3872)$ is constrained to the PDG 22 value. Systematic errors not 7 evaluated. 7 Using $\chi_{c1}(3872)$ produced in inclusive *b*-hadron decays and $m_{\psi(2S)} = 3686.097 \pm 0.010$
- MeV. Breit-Wigner parametrization. Superseded by the combined value in AAIJ 205.
- ⁸Using Breit-Wigner parametrization. Superseded by the combined value in AAIJ 205.
- ⁹ Fit with fixed width and including two resonances, $\chi_{c0}(3915)$ and X(3960).

¹⁰Could be a different state. ¹¹Calculated from the corresponding $m_{\chi_{c1}(3872)} - m_{\psi(2S)}$ using $m_{\psi(2S)} = 3686.093$ MeV. Superseded by AUBERT 08Y.

¹²Calculated from the corresponding $m_{\chi_{c1}(3872)} - m_{\psi(2S)}$ using $m_{\psi(2S)} =$ 3685.96MeV. Superseded by AUBERT 06.

 13 Superseded by AALTONEN 09AU.

 $^{14}\,\rm{Superseded}$ by CHOI 11.

 $^{15}\,\mathrm{A}$ lower mass value can be due to an incorrect momentum scale for soft pions.

χ_{c1} (3872) MASS FROM $\overline{D}^{*0} D^0$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT					
\bullet \bullet We do not use the following data for averages, fits, limits, etc. \bullet \bullet										
$3873.71^{+0.56}_{-0.50}{\pm}0.13$		¹ HIRATA	23	BELL	$B^0 \rightarrow D^0 \overline{D}^{*0} K^0, B^+ \rightarrow D^0 \overline{D}^{*0} K^+$					
$\begin{array}{rrrr} 3872.9 & +0.6 & +0.4 \\ & -0.4 & -0.5 \end{array}$	50	^{2,3} AUSHEV	10	BELL	$B \rightarrow \overline{D}^{*0} D^0 K$					
$3875.1 \begin{array}{c} +0.7 \\ -0.5 \end{array} \pm 0.5$	33 ± 6	³ AUBERT	08 B	BABR	$B ightarrow \overline{D}^{*0} D^0 K$					
$3875.2 \ \pm 0.7 \ +0.9 \ -1.8$	24 ± 6	^{3,4} GOKHROO	06	BELL	$B \rightarrow D^0 \overline{D}{}^0 \pi^0 K$					

 1 From a fit of a Breit-Wigner function with energy dependent width. 2 Calculated from the measured $m_{\chi_{c1}(3872)} - m_{D^{*0}} - m_{\overline{D}^{0}} = 1.1 \substack{+0.6 + 0.1 \\ -0.4 - 0.3}$ MeV. 3 Experiments report $D^{*0}\overline{D}^{0}$ invariant mass above $D^{*0}\overline{D}^{0}$ threshold because D^{*0} decay

products are kinematically constrained to the D^{*0} mass, even though the D^{*0} may decay off-shell. ⁴Superseded by AUSHEV 10.

 $m_{\chi_{\epsilon 1}(3872)} - m_{J/\psi}$ VALUE (MeV) EVTS DOCUMENT ID TECN COMMENT $p \overline{p} \rightarrow J/\psi \pi^+ \pi^- X$ 774.9±3.1±3.0 ABAZOV 04F D0 522

$m_{\chi_{c1}(3872)} - m_{\psi(25)}$

VALUE (MeV)	EVTS	DOCUMENT I	D TECN	COMMENT	N					
• • • We do not use t	ne following	g data for avera	ges, fits, limits,	etc. • • •						
$185.598 \pm 0.067 \pm 0.068$	15.6k	¹ AAIJ	20AD LHCB	$pp \rightarrow J/\psi \pi^+ \pi^- X$						
185.54 ± 0.06	19.8k	² AAIJ	20s LHCB	$pp \rightarrow J/\psi \pi^+ \pi^- X$						
187.4 ± 1.4	25	³ AUBERT	05r BABR	$B^+ \rightarrow K^+ J/\psi \pi^+ \pi^-$						
 187.4 ±1.4 25 3 AUBERT 05R BABR B⁺ → K⁺J/ψπ⁺π⁻ ¹Using χ_{c1}(3872) produced in inclusive b-hadron decays. Breit-Wigner parametrization. Superseded by the combined value in AAIJ 20S. ²Combining m_{χ_{c1}(3872)} - m_ψ(2S) = 185.49 ± 0.06 ± 0.03 MeV from AAIJ 20S and the measured mass difference from AAIJ 20AD. Breit-Wigner parametrization. ³Superseded by AUBERT 06. 										

$\chi_{c1}(30/2)$ WID I H

VALUE (MeV)	CL% EVTS	DOCUMEN	T ID TECN	I COMMENT	
1.19±0.21 OUR	AVERAGE	Error includes s	cale factor of 2	1.1.	
$1.39\!\pm\!0.24\!\pm\!0.10$	15.6k	¹ AAIJ	20AD LHC	B $pp \rightarrow J/\psi \pi^+ \pi^- X$	(
$0.96^{+0.19}_{-0.18} \pm 0.21$	4.2k	² AAIJ	20s LHC	$B B^+ \to \ J/\psi \pi^+ \pi^- K^+$	- (

NODE=M176M;LINKAGE=F

NODE=M176M;LINKAGE=CO

NODE=M176M;LINKAGE=AC NODE=M176M;LINKAGE=AA

NODE=M176M;LINKAGE=AB NODE=M176M;LINKAGE=H

NODE=M176M;LINKAGE=D

NODE=M176M;LINKAGE=E NODE=M176M;LINKAGE=B NODE=M176M;LINKAGE=A NODE=M176M;LINKAGE=AE

NODE=M176M;LINKAGE=AU

NODE=M176M;LINKAGE=AT NODE=M176M;LINKAGE=CH NODE=M176M:LINKAGE=AN

NODE=M176MD0

NODE=M176MD0

I

L

NODE=M176MD0;LINKAGE=A NODE=M176MD0;LINKAGE=AS NODE=M176MD0;LINKAGE=AU

NODE=M176MD0;LINKAGE=GO

NODE=M176DM

NODE=M176DM

NODE=M176DM2 ODE=M176DM2

ODE=M176DM2;LINKAGE=A

ODE=M176DM2;LINKAGE=E

ODE=M176DM2;LINKAGE=AU

NODE=M176W

NODE=M176W

OCCUR=3OCCUR=2 \bullet \bullet \bullet We do not use the following data for averages, fits, limits, etc. \bullet \bullet

<2.4	90		ABLIKIM	14	BES3	$e^+ e^- \rightarrow J/\psi \pi^+ \pi^- \gamma$
<1.2	90		CHOI	11	BELL	$B \rightarrow K \pi^+ \pi^- J/\psi$
<3.3	90		AUBERT	08Y	BABR	$B^+ \rightarrow K^+ J/\psi \pi^+ \pi^-$
<4.1	90	69	AUBERT	06	BABR	$B \rightarrow K \pi^+ \pi^- J/\psi$
<2.3	90	36	³ СНОІ	03	BELL	$B \rightarrow K \pi^+ \pi^- J/\psi$

¹Using χ_{c1} (3872) produced in inclusive *b*-hadron decays. Breit-Wigner parametrization.

²Using Breit-Wigner parametrization. Partially overlapping dataset with that of AAIJ 20AD. ³Superseded by CHOI 11.

χ_{c1} (3872) WIDTH FROM $\overline{D}^{*0} D^0$ MODE

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT	
$\bullet \bullet \bullet$ We do not use	the following	data for averages	s, fits,	limits, e	etc. • • •	
$5.2^{+2.2}_{-1.5}{\pm}0.4$		¹ HIRATA	23	BELL	$B^{0} \rightarrow D^{0} \overline{D}^{*0} K^{0}, \\ B^{+} \rightarrow D^{0} \overline{D}^{*0} K^{+}$	I
$3.9^{+2.8}_{-1.4}^{+0.2}_{-1.1}$	50	² AUSHEV	10	BELL	$B \rightarrow \overline{D}^{*0} D^0 K$	
$3.0^{+1.9}_{-1.4}{\pm}0.9$	33 ± 6	AUBERT	08 B	BABR	$B ightarrow \overline{D}^{*0} D^0 K$	

¹ From a fit of a Breit-Wigner function with energy dependent width. ² With a measured value of $B(B \rightarrow \chi_{c1}(3872)K) \times B(\chi_{c1}(3872) \rightarrow D^{*0}\overline{D}^{0}) = (0.80 \pm 0.20 \pm 0.10) \times 10^{-4}$, assumed to be equal for both charged and neutral modes.

$\chi_{c1}(3872)$ DECAY MODES

NODE=M176W;LINKAGE=E NODE=M176W;LINKAGE=F

NODE=M176W;LINKAGE=CH

NODE=M176WD0 NODE=M176WD0

L

NODE=M176WD0;LINKAGE=B NODE=M176WD0;LINKAGE=AU

NODE=M176215;NODE=M176

	Mode	Fraction $(\Gamma_i/\Gamma$	-) (Confidence level	
Γ ₁	e ⁺ e ⁻	< 2.7	$\times 10^{-7}$	90%	DESIG=1
Γ_2	$\pi^+\pi^-\pi^0$	< 8	imes 10 ⁻³	90%	DESIG=29
Γ ₃	$\pi^+\pi^- J/\psi(1S)$	(3.5 ± 0.9)) %		DESIG=2
Γ ₄	$\pi^{+}\pi^{-}\pi^{0}J/\psi(1S)$	not seen			DESIG=25
Γ ₅	$\omega \eta_c(1S)$	< 30	%	90%	DESIG=24
Γ ₆	$\rho(770)^0 J/\psi(1S)$	(2.8 ± 0.7)) %		DESIG=32
Γ ₇	$\omega J/\psi(1S)$	(4.1 ± 1.4)) %		DESIG=13
Γ ₈	$\phi\phi$	not seen			DESIG=26
Γ9	$D^0 \overline{D}{}^0 \pi^0$	(45 ±21)) %		DESIG=8
Γ ₁₀	$\overline{D}^{*0} D^0$	(34 ±12)) %		DESIG=12
Γ_{11}	$\gamma \gamma$	< 10	%	90%	DESIG=5
Γ_{12}	$D^0 \overline{D}{}^0$	< 26	%	90%	DESIG=6
Γ ₁₃	$D^{+}D^{-}$	< 17	%	90%	DESIG=7
Γ_{14}	$\pi^0 \chi_{c2}$	< 4	%	90%	DESIG=20
Γ ₁₅	$\pi^0 \chi_{c1}$	$(3.1^+_{-}1.5)$) %		DESIG=18
Γ ₁₆	$\pi^0 \chi_{c0}$	< 13	%	90%	DESIG=19
Γ ₁₇	$\pi^+\pi^-\eta_c(1S)$	< 13	%	90%	DESIG=14
Γ ₁₈	$\pi^0 \pi^0 \chi_{c0}$	< 6	%	90%	DESIG=28
Γ ₁₉	$\pi^+\pi^-\chi_{c0}$	< 2.0	%	90%	DESIG=27
Γ ₂₀	$\pi^+\pi^-\chi_{c1}$	< 7	imes 10 ⁻³	90%	DESIG=17
Γ ₂₁	<i>pp</i>	< 2.2	imes 10 ⁻⁵	95%	DESIG=16
	Radiative de	cays			NODE=M176;CLUMP=B
Γ ₂₂	$\gamma D^+ D^-$	< 3.5	%	90%	DESIG=21
Γ ₂₃	$\gamma D^0 D^0$	< 6	%	90%	DESIG=23
Γ ₂₄	$\gamma J/\psi$	(7.8 ± 2.9)) × 10 ⁻³		DESIG=9
Γ ₂₅	$\gamma \chi_{c1}$	< 8	imes 10 ⁻³	90%	DESIG=3
Γ ₂₆	$\gamma \chi_{c2}$	< 2.9	%	90%	DESIG=15
Γ ₂₇	$\gamma\psi(2S)$	possibly see	en		DESIG=11
	C-violating de	ecays			NODE=M176;CLUMP=A
Γ ₂₈	$\eta J/\psi$	< 1.7	%	90%	DESIG=4

		χ _{c1} (3872) Ρ/	ARTIAL WIE	OTHS			NODE=M176220
Γ(e⁺ e⁻) <u>VALUE (eV)</u> < 0.32 • • • We do no < 4.3 <280	<u>CL%</u> 90 t use the 90 90	DOCUMENT IE ¹ ABLIKIM following data fo ² ABLIKIM ³ YUAN	230 BES3 r averages, fits, 15V BES3 04 RVUE	$\begin{array}{c} \underline{COMMENT}\\ e^+e^- \rightarrow \pi^+\\ \text{limits, etc.} \bullet \bullet\\ 4.0-4.4 \ e^+e^-\\ e^+e^- \rightarrow \pi^+ \end{array}$	$ \begin{array}{c} -\pi^{-} J/\psi \\ \bullet \\ - \rightarrow \pi^{+} \pi^{-} J \\ \pi^{-} J/\psi \end{array} $	Γ <u>1</u> Ι	NODE=M176W1 NODE=M176W1
¹ Fit to cross $\pi^+\pi^- J/\psi($ ² ABLIKIM $\pi^+\pi^- J/\psi($	section us 15)) = (3 15V геро 15)) × Г	sing a total width 3.8 \pm 1.2)% from rts this limit $(\chi_{c1}(3872) \rightarrow$	value of 1.19 PDG 20. from the me $e^+e^-)/\Gamma < 0$	\pm 0.21 MeV and assurement of \lesssim 0.13 eV using	$F(\chi_{c1}(3872))$ $F(\chi_{c1}(3872))$ $F(\chi_{c1}(3872))$	$) \rightarrow $ \rightarrow \rightarrow	NODE=M176W1;LINKAGE=C NODE=M176W1;LINKAGE=B
$\pi^{+}\pi^{-}J/\psi($ ³ Using BAI 9 $\chi_{c1}(3872)$ is	1S))/Γ = 98E data o s the same	= 3%. on $e^+e^- ightarrow \pi$ e as that of ψ (25	$^{+}\pi^{-}\ell^{+}\ell^{-}$. 5) (85.4 keV).	Assuming that	$\Gamma(\pi^+\pi^-J/\psi$) of	NODE=M176W1;LINKAGE=A
		χ _{c1} (3872) Γ(i)Γ(e ⁺ e ⁻)/Γ	(total)			NODE=M176230
$\frac{\Gamma(\pi^+\pi^- J/\psi)}{\sqrt{2}}$	(1 <i>S</i>)) ×	Γ(e⁺e⁻)/Γ tc <u>DOCUMENT ID</u> 0%) [<0.13 eV	ntal <u>TECN</u> (CL = 90%) C	<u>COMMENT</u> DUR 2023 BEST	Г₃Г ;	L/F	NODE=M176G1 NODE=M176G1

15V BES3 4.0-4.4 $e^+e^- \rightarrow \pi^+\pi^- J/\psi$

CLE3 $e^+e^- \rightarrow \pi^+\pi^- J/\psi$

RVUE $e^+e^- \rightarrow \pi^+\pi^- J/\psi$

05D BABR 10.6 $e^+e^- \rightarrow K^+K^-\pi^+\pi^-\gamma$

NODE=M176G1;LINKAGE=B NODE=M176G1;LINKAGE=AU

NODE=M176G1;LINKAGE=DO NODE=M176G1;LINKAGE=A

NODE=M176232

I

L

NODE=M176H1 NODE=M176H1

NODE=M176H1;LINKAGE=A

NODE=M176H1;LINKAGE=DO

NODE=M176G01 NODE=M176G01

NODE=M176G01;LINKAGE=LE

NODE=M176G02 NODE=M176G02

• • • We do	o not use the	following data fo	or averages, fits	, limits, etc. • • •	•				
< 4.3	90	² ABLIKIM	15V BES3	$4.0-4.4 \ e^+ e^-$	$\rightarrow \pi^+ \pi^- J/\psi$				
<280	90	³ YUAN	04 RVUE	$e^+e^- \rightarrow \pi^+\pi^-$	$\pi^{-}J/\psi$				
¹ Fit to cross section using a total width value of 1.19 ± 0.21 MeV and $B(\chi_{c1}(3872) \pi^+\pi^- J/\psi(1S)) = (3.8 \pm 1.2)\%$ from PDG 20. ² ABLIKIM 15V reports this limit from the measurement of $\Gamma(\chi_{c1}(3872) \pi^+\pi^- J/\psi(1S)) \times \Gamma(\chi_{c1}(3872) \rightarrow e^+e^-)/\Gamma < 0.13$ eV using $\Gamma(\chi_{c1}(3872) \pi^+\pi^- J/\psi(1S))/\Gamma = 3\%$. ³ Using BAI 98E data on $e^+e^- \rightarrow \pi^+\pi^-\ell^+\ell^-$. Assuming that $\Gamma(\pi^+\pi^- J/\psi) \chi_{c1}(3872)$ is the same as that of $\psi(2S)$ (85.4 keV).									
		χ _{c1} (3872) Γ(i	i)Γ(e ⁺ e ⁻)/Γ	(total)					
Γ(π ⁺ π ⁻ J	$/\psi(1S))$ >	< Γ(e ⁺ e ⁻)/Γ _t	otal		$\Gamma_3\Gamma_1/I$				
VALUE (eV)	<u>CL%</u>	DOCUMENT ID	TECN	COMMENT					
< 7.5 × 10	0^{-3} (CL = 9	90%) [<0.13 eV	(CL = 90%)	OUR 2023 BEST I	_IMIT]				
< 7.5 × 10	ე−3 ₉₀	¹ ABLIKIM	230 BES3	$e^+e^- \rightarrow \pi^+\pi$	$-J/\psi$				

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

ABLIKIM

^{2,3} AUBERT

³ DOBBS

⁴ YUAN

²Using B($\chi_{c1}(3872) \rightarrow J/\psi \pi^{+}\pi^{-}$) · B($J/\psi \rightarrow \mu^{+}\mu^{-}$) · $\Gamma(\chi_{c1}(3872) \rightarrow e^{+}e^{-})$ < 0.37 eV from AUBERT 05D and B($J/\psi
ightarrow \mu^+\mu^-$) = 0.0588 \pm 0.0010 from the

PDG 04.

< 0.13

< 6.2

< 8.3

<10

³Assuming $\chi_{c1}(3872)$ has $J^{PC} = 1^{--}$.

90

90

90

90

⁴Using BAI 98E data on $e^+e^- \rightarrow \pi^+\pi^-\ell^+\ell^-$. From theoretical calculation of the production cross section and using $B(J/\psi \rightarrow \mu^+ \mu^-) = (5.88 \pm 0.10)\%$.

05

04 $^{1}\,\text{Fit}$ to cross section using a total width value of 1.19 \pm 0.21 MeV from PDG 20.

$\chi_{c1}(3872) \Gamma(i)\Gamma(\gamma\gamma)/\Gamma(total)$

$\Gamma(\pi^+\pi^- J/\psi(1$	<i>S</i>)) ×	$\Gamma(\gamma)$	γ)/Γ _{total}				Γ ₃ Γ ₁₁ /Γ
VALUE (eV)	<u>CL%</u> E	VTS	DOCUMENT ID	TECN	COMMENT		
• • • We do not	use the	followi	ng data for averag	ges, fi	ts, limits	, etc. • • •	
$5.5^{+4.1}_{-3.8}{\pm}0.7$		3	¹ TERAMOTO	21	BELL	$e^+e^- ightarrow$	$\gamma^*\gamma$ at $\Upsilon({\sf nS})$
<12.9	90		² DOBBS	05	CLE3	$e^+e^- \rightarrow$	$\pi^+\pi^-J/\psi\gamma$
¹ Measured in si model. Here, I	ingle-tag $\Gamma(\chi_{c1}(3$; two-p 872) -	photon production $ ightarrow \gamma \gamma$) is the redu	assur iced t	ning Q ² wo-phot	dependence on decay wic	of a $c \overline{c}$ meson dth, $\widetilde{\Gamma}_{\gamma \gamma}$.

²Assuming $\chi_{c1}(3872)$ has positive C parity and spin 0.

$\Gamma(\omega J/\psi(1S))$	× $\Gamma(\gamma\gamma)/\Gamma_{ta}$	otal			Γ ₇ Γ ₁₁ /Γ
VALUE (eV)	CL%	DOCUMENT ID	TECN	COMMENT	

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

¹LEES 12AD BABR $e^+e^- \rightarrow e^+e^- \omega J/\psi$ 90 < 1.7¹Assuming $\chi_{c1}(3872)$ has spin 2.

$\Gamma(\pi^+\pi^-\eta_c(1S))$	Γ ₁₇ Γ ₁₁ /Γ				
VALUE (eV)	<u>CL%</u>	DOCUMENT ID	TECN	COMMENT	
<11.1	90	LEES	12AE BABR	$e^+e^- ightarrow$	$\mathbf{e^+}\mathbf{e^-}\pi^+\pi^-\eta_{\rm C}$

χ_{c1} (3872) BRANCHING RATIOS

$\Gamma(\pi^+\pi^-\pi^0)/\Gamma_{\rm total}$				Γ_2/Γ	NODE=M176R30
VALUE (%)		TID TECN	COMMENT		NODE=M176R30
<0.8 (CL = 90%) [<0	0.9% (CL = 90%) OUR	2023 BEST LI	MIT]		
<0.8	90 ^{1,2} YIN	23 BEL	L $B^+ \rightarrow \chi_{c1}(38)$	572) <i>K</i> +	
• • • We do not use the	e following data for ave	rages, fits, limits	s, etc. $\bullet \bullet \bullet$. 0	
<1.1	90 ^{2,3} YIN	23 BEL	$L B^{0} \rightarrow \chi_{c1}(387)$	72) K ⁰	OCCUR=2
¹ YIN 23 reports [$\Gamma(\chi$ < 1.9×10 ⁻⁶ which	$c_{c1}(3872) \rightarrow \pi^+ \pi^- \pi^-$ we divide by our best va	$(\Gamma^{0})/\Gamma_{total}] \times [1]$ lue B($B^+ \rightarrow \chi_{0}$	$B(B^+ \rightarrow \chi_{c1}(387))$ $\chi_{c1}(3872) K^+) = 2.3$	$(72) K^+)]$ $(8 \times 10^{-4}).$	NODE=M176R30;LINK
² Assuming the decay limit is the 90% "cre	products, $\pi^+\pi^-\pi^0$, and the set of the s	re uniformly dist Bayesian).	ributed in phase spa	ace. The	NODE=M176R30;LINF
5 YIN 23 reports [F(χ $< 1.5 imes 10^{-6}$ which	$\kappa_{c1}(3872) \rightarrow \pi^+ \pi^-$ we divide by our best va	$\pi^{0})/\Gamma_{total}] \times alue B(B^{0} \rightarrow \chi_{0})$	$ [B(B^0 \to \chi_{c1}(38) \\ _{c1}(3872) K^0) = 1.4 $	$(72) K^0)]$ ×10 ⁻⁴ .	NODE=M176R30;LINF
$\Gamma(\pi^+\pi^-J/\psi(1S))/\Gamma$	- total			Γ ₃ /Γ	NODE=M176R6
	<u>DOCUMENT I</u>	ID <u>TECN</u>	COMMENT		NODE=M176R6
$[0.035 \pm 0.009$ OUR AVER	AGE 23 AVERAGE]				NEW
$0.035 \pm 0.002 \pm 0.009$	¹ AAIJ	20s LHCB	$B^+ \rightarrow J/\psi \pi^+ \pi$	$-\kappa^+$	SYCLP=A
$0.038\!\pm\!0.004\!\pm\!0.010$	² CHOI	11 BELL	$B^+ \rightarrow \pi^+ \pi^- J_{\rho}$	$/\psi K^+$	SYCLP=A
$0.037 \pm 0.007 \substack{+0.009 \\ -0.010}$	93 ^{3,4} AUBERT	08Y BABR	$B \rightarrow \chi_{c1}(3872)$	к	SYCLP=A
• • We do not use the	e following data for ave	rages, fits, limits	s, etc. ● ● ●		
seen	151 ⁵ BALA	15 BELL	$B \rightarrow \chi_{c1}(3872)$	Kπ	
$0.056 \pm 0.018 + 0.014$	30 ⁶ AUBERT	05r BABR	$B^+ \rightarrow K^+ \pi^+ \pi$	$-J/\psi$	SYCLP=A
-0.015 0.060+0.013+0.016	36 ⁷ СНОІ	03 BELL	$B^+ \rightarrow K^+ \pi^+ \pi$	$-1/_{2/}$	
$1_{\text{A}\text{A}\text{I}\text{I}}$ 20s reports	$[\Gamma(\chi_{-1}(3872))] \rightarrow$	$\pi^+\pi^- I/\psi(15)$))/F .1 × [B(β/ψ B+ →	
$\chi_{c1}(3872) K^+)] = 0$ $B(B^+ \rightarrow \chi_{c1}(3872)$ error and our second ² CHOI 11 reports $\chi_{c1}(3872) K^+)] = 0$ $B(B^+ \rightarrow \chi_{c1}(3872)$ error and our second	$\begin{array}{l} (7.95 \pm 0.15 \pm 0.33) \approx \\ (7.95 \pm 0.15 \pm 0.33) \approx \\ (2) \ K^+) = (2.3 \pm 0.6) \times \\ (2) \ K^-) = (2.3 \pm 0.6) \times \\ (3.63 \pm 0.32 \pm 0.52) \approx \\ (3.63 \pm 0.32 \pm 0.52) \approx \\ (3.63 \pm 0.32 \pm 0.6) \times \\ (3.63 \pm 0.32 \pm 0.5) \times \\ (3.63 \pm 0.5) \times \\ (3.63$	× 10 ⁻⁶ which v < 10 ⁻⁴ . Our first error from using $\pi^+\pi^- J/\psi(1S$ × 10 ⁻⁶ which v < 10 ⁻⁴ . Our first our from using	we divide by our best st error is their exper- g our best value.))/ Γ_{total}] × [B(we divide by our best st error is their exper- st error is their exper-	est value eriment's $B^+ \rightarrow$ est value eriment's	NODE=M176R6;LINK
³ AUBERT 08Y repo $\chi_{c1}(3872)K^+)$] = (3 $\chi_{c1}(3872)K^+)$ = (3 $\chi_{c1}(3872)K^+)$ = (3	error is the systematic order is the systematic order is $[\Gamma(\chi_{c1}(3872) \rightarrow 8.4 \pm 1.5 \pm 0.7) \times 10^{-6} 2.3 \pm 0.6) \times 10^{-4}$. O	$\pi^+\pi^- J/\psi(1)$ which we divide ur first error is	$S)/\Gamma_{total} \propto [B($ by our best value E their experiment's e	$(B^+ ightarrow A^+ ightarrow B^+ ightarrow B^+$	NODE=M176R6;LINK/
⁴ superseded by LEES	20C	in using our best	value.		NODE-M176R6/LINK
⁵ BALA 15 reports B = $(7.9 \pm 1.3 \pm 0.4)$	$S(\chi_{c1}(3872) \rightarrow \pi^+ \pi^-, 4) \times 10^{-6} \text{ and } B(\chi^-)$	$(J/\psi) \times B(E)$ $c_1(3872) \rightarrow 10^{-6}$	$3^{0} \rightarrow \chi_{c1}(3872)$ $\pi^{+}\pi^{-}J/\psi) \times B_{0}$	$(B^+ \rightarrow)$	NODE=M176R6;LINK
$\chi_{c1}(3672)K^{+}\pi^{+}) = 6$ Superseded by AUBE $\Gamma_{total}] \times [B(B^{+} \rightarrow$	$ \begin{array}{l} (10.6 \pm 3.0 \pm 0.9) \times \\ \text{RT 08Y. AUBERT 05R} \\ \chi_{c1}(3872) $	reports [$\Gamma(\chi_{c1})$] 	$(3872) \rightarrow \pi^+ \pi^- J/$ 0^{-5} which we divid	$\psi(1\mathcal{S})ig)/$ le by our	NODE=M176R6;LINK
best value $B(B^+ \rightarrow experiment's error an 7CHOI 03 reports \chi_{c1}(3872) K^+)] / [0.063 \pm 0.012 \pm 0.$	$\begin{array}{l} \chi_{c1}(3872)K^+) = (3) \\ \text{id our second error is th} \\ [\Gamma(\chi_{c1}(3872)) \rightarrow \\ [B(B^+ \rightarrow \psi(2S)K^+] \\ .007 \text{ which we multiple} \end{array}$	$2.3 \pm 0.6) imes 10$ e systematic erro $\pi^+ \pi^- J/\psi(1S^+)$] / [B($\psi(2S)$ y or divide by	$^{-4}$. Our first error or from using our be))/ Γ_{total}] × [B($\rightarrow J/\psi(1S)\pi^+$ our best values B	r is their est value. $B^+ \rightarrow \pi^-)] = (B^+ \rightarrow \pi^-)$	NODE=M176R6;LINK
$\chi_{c1}(3872) K^+) = (2)$ B($\psi(2S) \rightarrow J/\psi(1S)$ ment's error and our	$(2.3 \pm 0.6) \times 10^{-4}$, B(B 5) $\pi^+\pi^-$) = (34.69 ± 0) second error is the system	$B^+ ightarrow \psi(2S) K^-$ 0.34) $\times 10^{-2}$. (tematic error from	$^+$) = (6.24 \pm 0.21) Our first error is their or using our best va	× 10 ^{—4} , ir experi- alues.	
$\frac{\Gamma(\pi^+\pi^-\pi^0 J/\psi(1S))}{VALUE}$)/Г _{total}	T ID	COMMENT	Γ₄/Γ	NODE=M176R25 NODE=M176R25
not seen	¹ WANG	11B BEL	$\Gamma \qquad \Upsilon(2S) \rightarrow \gamma X$	_	
not seen	² SHEN	10A BEL	L $\Upsilon(1S) \rightarrow \gamma X$		

¹WANG 11B reports B($\Upsilon(2S) \rightarrow \gamma \chi_{c1}(3872)$) × B($\chi_{c1} \rightarrow \pi^+ \pi^- \pi^0 J/\psi$) < 2.4 × ^{10⁻⁶} at 95% CL. ²SHEN 10A reports B($\Upsilon(1S) \rightarrow \gamma \chi_{c1}(3872)$) × B($\chi_{c1} \rightarrow \pi^+ \pi^- \pi^0 J/\psi$) < 2.8 × ^{10⁻⁶} at 95% CL. NODE=M176R25;LINKAGE=A NODE=M176R25;LINKAGE=A

NODE=M176235

KAGE=A

KAGE=E

KAGE=D

	NEW
$\pi^{-} K^{+}$ / ψK^{+} K	SYCLP=A SYCLP=A SYCLP=A
Κπ π J/ψ π J/ψ	SYCLP=A
$(B^+ \rightarrow$ est value eriment's	NODE=M176R6;LINKAGE=E
$(B^+ \rightarrow)$ est value eriment's	NODE=M176R6;LINKAGE=F
$egin{array}{ccc} (B^+ & ightarrow \ B(B^+ ightarrow \ error \ and \ error \ and \ error \ and \ error \ and \ error \ eror \ error \ error \ error \ eroror \ erro$	NODE=M176R6;LINKAGE=AB
$egin{array}{c} K^+ \pi^- \ (B^+ \ ightarrow \end{array}$	NODE=M176R6;LINKAGE=C NODE=M176R6;LINKAGE=A
$\psi(1S))/de by ourr is their$	NODE=M176R6;LINKAGE=AE
$(B^+ \rightarrow \pi^-)] = 6(B^+ \rightarrow \times 10^{-4}, \text{ir experialues.})$	NODE=M176R6;LINKAGE=CH
Γ₄/Γ	NODE=M176R25 NODE=M176R25
< 2.4 ×	NODE=M176R25;LINKAGE=B

$ \frac{\Gamma(\omega \eta_{c}(1S)) / \Gamma_{\text{total}}}{\langle 0.30 \ (\text{CL} = 90\%) \ [< 0.33 \ (\text{CL} < 0.30 \ 90)]} $	Γ_{5} $\frac{DOCUMENT ID}{(L = 90\%) \text{ OUR } 2023 \text{ BEST LIMIT]}} \xrightarrow{TECN} \frac{COMMENT}{(VINOKUROVA 15)} \xrightarrow{M_{2}K^{+}} \omega n_{2}K^{+}$	/r NODE=M176R24 NODE=M176R24
¹ VINOKUROVA 15 reports $\chi_{c1}(3872) K^{+})] < 6.9 \times \chi_{c1}(3872) K^{+}) = 2.3 \times 10^{-10}$	$ [\Gamma(\chi_{c1}(3872) \rightarrow \omega \eta_c(1S))/\Gamma_{total}] \times [B(B^+ \times 10^{-5} \text{ which we divide by our best value } B(B^+ -4)] $	\rightarrow NODE=M176R24;LINKAGE=A \rightarrow
Γ(ρ(770)⁰ J/ψ(1S))/Γ(π ⁺ <u>VALUE (%)</u>	π ⁻ J/ψ(1S)) Γ ₆ /	F ₃ NODE=M176R33 NODE=M176R33
78.6±2.3±2.0 ¹ Assuming pure ρ contribution Using B($\rho^0 \rightarrow \pi^+\pi^-$) =	¹ AAIJ 235 LHCB $B^+ \rightarrow K^+ J/\psi \pi^+ \pi$ n only, i.e. excluding the contribution from ρ - ω interferen 100%.	 ce. NODE=M176R33;LINKAGE=A
$\frac{\Gamma(\omega J/\psi(1S))}{\Gamma_{\text{total}}}$	DOCUMENT ID TECN COMMENT	/ Г NODE=M176R14 NODE=M176R14
••• We do not use the following $0.026 \pm 0.010 \pm 0.007$ 21 ± 7 ¹ DEL-AMO-SANCHEZ 10B in $\chi_{c1}(3872) K^+) = (6 \pm 2 \pm 2)$ $\chi_{c1}(3872) K^+) = (2.3 \pm 0.0)$ second error is the systematic also reports $B(B^0 \rightarrow \chi_{c1}(3872)) K^+$	In g data for averages, fits, limits, etc. • • • ¹ DEL-AMO-SA10B BABR $B^+ \rightarrow \omega J/\psi K^+$ reports $[\Gamma(\chi_{c1}(3872) \rightarrow \omega J/\psi(1S))/\Gamma_{total}] \times [B(B^+ \pm 1) \times 10^{-6}$ which we divide by our best value $B(B^+ 5) \times 10^{-4}$. Our first error is their experiment's error and c error from using our best value. DEL-AMO-SANCHEZ 1 872) K^0 × $B(\chi_{c1}(3872) \rightarrow J/\psi\omega) = (6 \pm 3 \pm 1) \times 10^{-6}$	\rightarrow NODE=M176R14;LINKAGE=DE \rightarrow 00B -6
$\frac{\Gamma(\omega J/\psi(1S))}{\Gamma(\pi^+\pi^- J/\psi(1S))} = \frac{\Gamma(\omega J/\psi(1S))}{\Gamma(\pi^+\pi^- J/\psi(1S))}$	$\psi(1S))$ $\Gamma_7/$ <u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u> rror includes scale factor of 1.2. [1.1 \pm 0.4 OUR 2023	F3 NODE=M176R15 NODE=M176R15 NEW
$\begin{array}{c} 1.24 \pm 0.33 \pm 0.10 \\ 1.6 \ \ -0.3 \ \ \pm 0.2 \\ 0.8 \ \ \pm 0.3 \end{array}$	^{1,2} AAIJ ³ ABLIKIM ⁴ DEL-AMO-SA10B ^{1,2} AAIJ ²³⁵ LHCB $B^+ \rightarrow K^+ J/\psi \pi^+ \pi^-$ $e^+ e^- \rightarrow \gamma \omega J/\psi$	OCCUR=3
[B($\omega(782) \rightarrow \pi^+\pi^-$)] = (B($\omega(782) \rightarrow \pi^+\pi^-$)] = (B($\omega(782) \rightarrow \pi^+\pi^-$) = (error and our second error is ² Excluding ρ - ω interference e ³ Fit with fixed width and incl ⁴ Statistical and systematic e $\chi_{c1}(3872) K$) × B($\chi_{c1}(387)$ account the common system	$(72) \rightarrow \omega J/\psi(15))/1 (\chi_{c1}(3872) \rightarrow \pi^+\pi^- J/\psi(15))]$ $1.9 \pm 0.4 \pm 0.3) \times 10^{-2}$ which we divide by our best value. $1.53 \pm 0.12) \times 10^{-2}$. Our first error is their experiments the systematic error from using our best value. ffects. uding two resonances, $\chi_{c0}(3915)$ and $X(3960)$. errors added in quadrature. Uses the values of B(B $Y(2) \rightarrow J/\psi \pi^+ \pi^-)$ reported in AUBERT 08Y, taking in matrics.	NODE=M176R15;LINKAGE=G NODE=M176R15;LINKAGE=H NODE=M176R15;LINKAGE=H NODE=M176R15;LINKAGE=A NODE=M176R15;LINKAGE=DE nto
$\Gamma(\phi\phi)/\Gamma_{\text{total}}$	DOCUMENT ID TECN COMMENT 1 AAU 1788 LHCB nn at 7, 8 TeV	/ Г NODE=M176R26 NODE=M176R26
1 AAIJ 17BB reports B($b ightarrow \chi$ at 95% CL.	$\chi_{c1}(3872)$ anything) × B($\chi_{c1}(3872) \rightarrow \phi \phi$) < 4.5 × 10 ⁻	-7 NODE=M176R26;LINKAGE=A
$ \frac{\Gamma(D^0 \overline{D}{}^0 \pi^0) / \Gamma_{\text{total}}}{\frac{VALUE}{0.45 + 0.16 + 0.11}} 17 $ ••• We do not use the following the	Γ_{g} <u>S</u> <u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u> 7 ¹ GOKHROO 06 BELL $B^+ \rightarrow D^0 \overline{D}{}^0 \pi^0 K^-$ ing data for averages, fits, limits, etc. • • •	/ Г NODE=M176R12 NODE=M176R12
<0.26 90 ¹ GOKHROO 06 reports $\chi_{c1}(3872)K^+)$] = (1.02 ± B($B^+ \rightarrow \chi_{c1}(3872)K^+$) = error and our second error is	$[\Gamma(\chi_{c1}(3872) \rightarrow D^0 \overline{D}{}^0 \pi^0)/\Gamma_{total}] \times [B(B^+ \odot 0.31^{+}_{-0.29}) \times 10^{-4}$ which we divide by our best va = $(2.3 \pm 0.6) \times 10^{-4}$. Our first error is their experiment, the systematic error from using our best value.	06 \rightarrow NODE=M176R12;LINKAGE=GO lue ht's
² CHISTOV 04 reports [f $\chi_{c1}(3872) K^+$)] < 0.6 × $\chi_{c1}(3872) K^+$) = 2.3 × 10 ⁻	$(\chi_{c1}(3872) \rightarrow D^0 \overline{D}{}^0 \pi^{0}) / \Gamma_{total}] \times [B(B^+ \times 10^{-4} \text{ which we divide by our best value } B(B^+ - 4)]$	\rightarrow NODE=M176R12;LINKAGE=A \rightarrow
$\frac{\Gamma(D^0 \overline{D}{}^0 \pi^0)}{VALUE} / \Gamma(\pi^+ \pi^- J/\psi)$	(15)) Fg/	Γ3 NODE=M176R17 NODE=M176R17
• • We do not use the followi <1.16 90	ing data for averages, fits, limits, etc. • • • ABLIKIM 20W BES3 $e^+e^- \rightarrow \gamma \chi_{c1}$ (387	2)

$\Gamma(\overline{D}^{*0}D^0)/\Gamma_{\text{total}}$	<u>EVTS</u>	DOCUMENT ID	TECN	<u>COMMENT</u>	Γ ₁₀ /Γ	NODE=M176R13 NODE=M176R13
$0.34 {\pm} 0.08 {\pm} 0.09$	41^{+9}_{-8}	¹ AUSHEV 10) BELL	$B^+ \rightarrow D^{*0}\overline{L}$	$\bar{p}^0 \kappa^+$	SYCLP=A
$\bullet \bullet \bullet$ We do not use t	he following o	data for averages, fi	ts, limits, e	tc. • • •		
$0.73\!\pm\!0.26\!\pm\!0.19$	27 ± 6	² AUBERT 08	BB BABR	$B^+ \rightarrow \overline{D}^{*0}L$	$0^0 \kappa^+$	SYCLP=A
¹ AUSHEV 10 report (0.77 \pm 0.16 \pm 0.10 - (2.3 \pm 0.6) × 10	s [$\Gamma(\chi_{c1}(3872)) \times 10^{-4}$ which $\chi_{c1}(3872)$	$(2) \rightarrow \overline{D}^{*0} D^0) / \Gamma_{to}$ the we divide by our base or region of the second	$_{tal}] \times [B(B)$	$\chi^+ \rightarrow \chi_{c1}(3872)$ $\chi_{c1}(3872)$ $\chi_{c1}(3872)$	$(2) K^+)] =$ 872) K^+)	NODE=M176R13;LINKAGE=AS
the systematic error ² AUBERT 08B repo = (1.67 ± 0.36) $\chi_{c1}(3872)K^+) =$ our second error is	r from using rts [$\Gamma(\chi_{c1}(38 \pm 0.47) \times 10^{-1})$ (2.3 ± 0.6) the systemat	our best value. $72) \rightarrow \overline{D}^{*0} D^0)/\Gamma$. 0^{-4} which we div $\times 10^{-4}$. Our first ic error from using	total] × [Bi vide by ou error is the our best va	$(B^+ \rightarrow \chi_{c1})$ r best value r ir experiment's lue.	$B(B^+ \rightarrow B)$ error and	NODE=M176R13;LINKAGE=AU
$\Gamma(\overline{D}^{*0}D^0)/\Gamma(\pi^+\pi)$	$- 1/\psi(1.5)$				[10/[2	
VALUE	ΕVTS	DOCUMENT ID	TECN	COMMENT	. 10/ . 3	NODE=M176R16 NODE=M176R16
11.77±3.09	50	ABLIKIM 20	DW BES3	$e^+e^- \rightarrow \gamma \chi$	(3872)	
$\frac{\Gamma(\gamma\gamma)}{\Gamma_{\text{total}}}$	<u> CL%</u>	DOCUMENT ID	<u> </u>	<u>COMMENT</u>	Γ ₁₁ /Γ	NODE=M176R09 NODE=M176R09
< 0.10 (CL = 90%)	00 CL =	1 WICHT		$a^+a^- \rightarrow r($	45)	
¹ WICHT 08 report 2.4×10^{-5} which	s [$\Gamma(\chi_{c1}(387$ we divide by c	2) $\rightarrow \gamma \gamma)/\Gamma_{total}$	$ \times [B(B^+ \rightarrow \chi_{c1}(3$	$ \begin{array}{c} e^+e^- \rightarrow & r_{(1)} \\ \rightarrow & \chi_{c1}(3872) \\ \kappa^+) = 2. \end{array} $	$(K^+)] < 3 \times 10^{-4}.$	NODE=M176R09;LINKAGE=A
Γ(D ⁰ D̄ ⁰)/Γ _{total}	CL%	DOCUMENT ID	TECN	COMMENT	Γ ₁₂ /Γ	NODE=M176R3 NODE=M176R3
<0.26 (CL = 90%)	[<0.29 (CL =	90%) OUR 2023 I	BEST LIMI	Т]	-	
<0.26	90	¹ CHISTOV 04	4 BELL	$B \rightarrow K D^0 \overline{D}$	J	
¹ CHISTOV 04 repo $< 6 \times 10^{-5}$ which	rts [$\Gamma(\chi_{c1}(38$ we divide by	72) $\rightarrow D^0 \overline{D}^0) / \Gamma_t$	otal] × [B($B^+ \rightarrow \chi_{c1}(38)$	372) K ⁺)]	NODE=M176R3;LINKAGE=A
	5		$\gamma \rightarrow \chi_{c1}(s)$	$3872)K^{+} = 2.$	3×10^{-4} .	
$\Gamma(D^+D^-)/\Gamma_{total}$	<u>CL%</u>	DOCUMENT ID	$\rightarrow \chi_{c1}$	<u>COMMENT</u>	3×10 ⁻⁴ . Γ₁₃/Γ	NODE=M176R4 NODE=M176R4
$\frac{\Gamma(D^+ D^-)}{\Gamma_{\text{total}}}$	<u>CL%</u> [<0.19 (CL =	DOCUMENT ID = 90%) OUR 2023 F	\xrightarrow{TECN} BEST LIMI	<u>COMMENT</u> T]	3×10 ⁻⁴ . Γ₁₃/Γ	NODE=M176R4 NODE=M176R4
$\frac{\Gamma(D^+D^-)}{\Gamma_{\text{total}}}$ $\frac{VALUE}{<0.17 \text{ (CL = 90\%)}}$ < 0.17 $^{1} \text{ CHISTOV 04 report}$ $< 4 \times 10^{-5} \text{ which}$	$\frac{CL\%}{[<0.19 (CL = 90)]}$ rts [$\Gamma(\chi_{c1}(38))$ we divide by	$\frac{DOCUMENT \ ID}{2}$ = 90%) OUR 2023 F ¹ CHISTOV 04 72) $\rightarrow D^+D^-)/\Gamma_1$ our best value B(B^-	$ \xrightarrow{TECN} \chi_{c1}(s) $ BEST LIMI 4 BELL total] × [B(+ → $\chi_{c1}(s))$	$\frac{COMMENT}{T]}$ $B \rightarrow KD^{+}D$ $(B^{+} \rightarrow \chi_{c1})(3872)K^{+}) = 2.$	r_{13}/r r_{13}/r r_{33}/r r_{13}/r	NODE=M176R4 NODE=M176R4 NODE=M176R4;LINKAGE=A
$\Gamma(D^+D^-)/\Gamma_{\text{total}}$ $\frac{VALUE}{<0.17 \text{ (CL = 90\%)}}$ <0.17 $^{1} \text{ CHISTOV 04 report}$ $<4 \times 10^{-5} \text{ which}$ $\Gamma(\pi^0\chi_{c2})/\Gamma(\pi^+\pi^-)$	$\frac{CL\%}{[<0.19 (CL = 90]$ rts [$\Gamma(\chi_{c1}(38)$ we divide by	$\frac{DOCUMENT \ ID}{2}$ = 90%) OUR 2023 F ¹ CHISTOV 04 72) $\rightarrow D^+ D^-)/\Gamma_{1}$ our best value B(B ⁻¹)	$ \begin{array}{c} & \chi_{c1}(s) \\ \hline & \underline{TECN} \\ \hline & BEST LIMI \\ & BELL \\ \hline & total] \times [B(s) \\ & + \rightarrow \chi_{c1}(s) \end{array} $	$\frac{COMMENT}{T]}$ $B \rightarrow KD^{+}D$ $(B^{+} \rightarrow \chi_{c1}(3872)K^{+}) = 2.$	Γ_{13}/Γ Γ_{13}/Γ Γ_{13}/Γ Γ_{13}/Γ Γ_{14}/Γ_{3}	NODE=M176R4 NODE=M176R4;LINKAGE=A NODE=M176R06
$\frac{\Gamma(D^+ D^-) / \Gamma_{\text{total}}}{< 0.17 \text{ (CL = 90\%)}}$ < 0.17 (CL = 90%) < 0.17 ¹ CHISTOV 04 report < 4 × 10 ⁻⁵ which $\Gamma(\pi^0 \chi_{c2}) / \Gamma(\pi^+ \pi^- \chi_{ALUE})$	$\frac{CL\%}{[<0.19 (CL = 90)]}$ rts [$\Gamma(\chi_{c1}(38))$ we divide by $-J/\psi(1S))$ $\underline{CL\%}$	$\frac{DOCUMENT \ ID}{2}$ $= 90\%) \ OUR \ 2023 \ F$ $= 90\%) \ OUR \ 2023 \ F$ $= 1 \ CHISTOV \qquad 0^{4}$ $= 0^{+} D^{-})/\Gamma_{1}$ our best value $B(B^{-})$ $= \frac{DOCUMENT \ ID}{2}$	$ \xrightarrow{TECN} \\ \begin{array}{c} & \underline{TECN} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	$\frac{COMMENT}{T}$ $B \rightarrow KD^{+}D$ $(B^{+} \rightarrow \chi_{c1}(3872)K^{+}) = 2.$ $\frac{COMMENT}{C}$	3×10^{-4} . Γ_{13}/Γ σ^{-} $372) K^{+})]$ 3×10^{-4} . Γ_{14}/Γ_{3}	NODE=M176R4 NODE=M176R4 NODE=M176R4;LINKAGE=A NODE=M176R06 NODE=M176R06
$\frac{\Gamma(D^+D^-)}{\Gamma_{\text{total}}} \frac{VALUE}{<0.17 \text{ (CL = 90\%)}} < 0.17 \text{ (CL = 90\%)} < 0.17 CHISTOV 04 \text{ report} < 4 \times 10^{-5} \text{ which} $ $\frac{\Gamma(\pi^0 \chi_{c2})}{\Gamma(\pi^+\pi^-)} = \frac{VALUE}{<1.1}$	$\frac{CL\%}{[<0.19 (CL = 90])}$ rts [$\Gamma(\chi_{c1}(38))$ we divide by $-J/\psi(1S))$ $\frac{CL\%}{90}$	$\frac{DOCUMENT \ ID}{2}$ $= 90\%) \ OUR \ 2023 \ I$ $= 1 \ CHISTOV \qquad 04$ $T(2) \rightarrow D^+D^-)/\Gamma_{1}$ our best value B(B^-) $\frac{DOCUMENT \ ID}{4}$ ABLIKIM 15	$\begin{array}{c} & \chi_{c1}(s) \\ & \underline{TECN} \\ BEST LIMI \\ & BELL \\ total] \times [B(s) \\ + & \chi_{c1}(s) \\ & \underline{TECN} \\ \hline & \underline{TECN} \\ \hline & BES3 \end{array}$	$\frac{COMMENT}{T]} = 2.$ $\frac{COMMENT}{B \rightarrow KD^{+}D}$ $(B^{+} \rightarrow \chi_{c1})(38)$ $(B^{+} \rightarrow \chi_{c1})(38)$ $K^{+}) = 2.$ $\frac{COMMENT}{e^{+}e^{-} \rightarrow \gamma \chi}$	3×10^{-4} . Γ_{13}/Γ σ^{-} 3×10^{-4} . Γ_{14}/Γ_{3} $c_{1}(3872)$	NODE=M176R4 NODE=M176R4 NODE=M176R4;LINKAGE=A NODE=M176R06 NODE=M176R06
$ \frac{\Gamma(D^+D^-)}{\Gamma_{\text{total}}} \\ \frac{VALUE}{<0.17 (CL = 90\%)} \\ < 0.17 \\ 1 CHISTOV 04 report < 4 \times 10^{-5} which \Gamma(\pi^0 \chi_{c2}) / \Gamma(\pi^+\pi^- \chi_{ALUE}) \\ < 1.1 \\ \Gamma(\pi^0 \chi_{c1}) / \Gamma_{\text{total}} \\ VALUE $	$\frac{CL\%}{[<0.19 (CL = 90)]}$ rts [$\Gamma(\chi_{c1}(38))$ we divide by $-J/\psi(15))$ $\frac{CL\%}{90}$	$\frac{DOCUMENT \ ID}{2}$ $= 90\%) OUR 2023 F$ $= 90\%) OUR 2023 F$ $= 1 CHISTOV 04$ $= 72) \rightarrow D^+ D^-)/\Gamma_{1}$ $= 000000000000000000000000000000000000$	$ \xrightarrow{T \in CN} \\ \begin{array}{c} \underline{T \in CN} \\ \hline \\ BEST LIMI \\ \hline \\ BELL \\ \hline \\ total \\ \hline \\ + \rightarrow \chi_{c1} (3 \\ \hline \\ - \\ 0 \\ \hline \\ 0 \\ \hline \\ \end{array} $	$\frac{COMMENT}{T]}$ $B \rightarrow KD^{+}D$ $(B^{+} \rightarrow \chi_{c1})(38372)K^{+}) = 2.$ $\frac{COMMENT}{e^{+}e^{-} \rightarrow \gamma\chi}$ $\frac{COMMENT}{COMMENT}$	3×10^{-4} . Γ_{13}/Γ σ^{-} 3×10^{-4} . Γ_{14}/Γ_{3} σ^{-} Γ_{15}/Γ	NODE=M176R4 NODE=M176R4;LINKAGE=A NODE=M176R06 NODE=M176R06 NODE=M176R06
$\Gamma(D^+D^-)/\Gamma_{\text{total}}$ $\frac{VALUE}{<0.17 \text{ (CL} = 90\%)}$ <0.17 $^{1} CHISTOV 04 reported to the equation of the equatio$	$\frac{CL\%}{[<0.19 (CL = 90)]}$ rts [$\Gamma(\chi_{c1}(38))$ we divide by $-J/\psi(1S))$ $\frac{CL\%}{90}$ the following of the	$\frac{DOCUMENT \ ID}{2}$ $= 90\%) \ OUR \ 2023 \ F$ $= 90\%) \ OUR \ 2023 \ F$ $= 1 \ CHISTOV \qquad 0^{4}$ $T(2) \rightarrow D^{+}D^{-})/\Gamma_{0}$ $= 0 \ DOCUMENT \ ID$	$\begin{array}{c} & \chi_{c1}(z) \\ & TECN \\ BEST LIMI \\ & BELL \\ total] \times [B(z) \\ & + \rightarrow \chi_{c1}(z) \\ & TECN \\ \hline & DU \\ BES3 \\ & TECN \\ & ts, limits, e \end{array}$	$\frac{COMMENT}{T]} = 2.$ $\frac{COMMENT}{B \rightarrow K D^{+} D}$ $\frac{COMMENT}{e^{+} e^{-} \rightarrow \gamma \chi}$ $\frac{COMMENT}{CCMMENT}$	3×10^{-4} . Γ_{13}/Γ σ^{-} 3×10^{-4} . Γ_{14}/Γ_{3} $c_{1}(3872)$ Γ_{15}/Γ	NODE=M176R4 NODE=M176R4;LINKAGE=A NODE=M176R06 NODE=M176R06 NODE=M176R06
$\Gamma(D^+D^-)/\Gamma_{\text{total}}$ $\frac{VALUE}{<0.17 (CL = 90\%)} < 0.17$ $^{1} CHISTOV 04 report < 4 \times 10^{-5} which$ $\Gamma(\pi^{0}\chi_{c2})/\Gamma(\pi^+\pi^-)$ $\frac{VALUE}{<1.1}$ $\Gamma(\pi^{0}\chi_{c1})/\Gamma_{\text{total}}$ $\frac{VALUE}{<0.035}$	$\frac{CL\%}{[<0.19 (CL = 90)]}$ rts [$\Gamma(\chi_{c1}(38))$ we divide by $-J/\psi(1S))$ $\frac{CL\%}{90}$ the following of 90	$\frac{DOCUMENT \ ID}{2}$ $= 90\%) OUR \ 2023 \ F$ $= 90\%) OUR \ 2023 \ F$ $= 1 \ CHISTOV \qquad 0^{4}$ $T(2) \rightarrow D^{+}D^{-})/\Gamma_{1}$ $= 0 \ DOCUMENT \ ID$ $= 0 \ ID$ $= 0 \ DOCUMENT \ ID$	$\begin{array}{c} & \chi_{c1}(z) \\ & TECN \\ BEST LIMI \\ & BELL \\ total] \times [B(z) \\ & \chi_{c1}(z) \\ & \chi_{c1}(z$	$\frac{COMMENT}{T}$ $B \rightarrow KD^{+}D$ $(B^{+} \rightarrow \chi_{c1})$	3×10^{-4} . Γ_{13}/Γ σ_{-} 3×10^{-4} . Γ_{14}/Γ_{3} $\overline{\Gamma_{15}/\Gamma}$ Γ_{15}/Γ	NODE=M176R4 NODE=M176R4;LINKAGE=A NODE=M176R06 NODE=M176R06 NODE=M176R06
$\Gamma(D^+D^-)/\Gamma_{total}$ $\frac{VALUE}{<0.17 (CL = 90\%)}$ <0.17 ¹ CHISTOV 04 report $< 4 \times 10^{-5} \text{ which}$ $\Gamma(\pi^0 \chi_{c2})/\Gamma(\pi^+\pi^-)$ $\frac{VALUE}{<1.1}$ $\Gamma(\pi^0 \chi_{c1})/\Gamma_{total}$ $\frac{VALUE}{<0.035}$ ¹ BHARDWAJ 19 $\chi_{c1}(3872) K^+) = \chi_{c1}(3872) K^+)$	$\frac{CL\%}{[<0.19 (CL = 90)]}$ rts [$\Gamma(\chi_{c1}(38))$ we divide by $-J/\psi(1S)$) $\frac{CL\%}{90}$ the following of 90 reports [$\Gamma(2.3 \times 10^{-4})$.	$\frac{DOCUMENT \ ID}{2}$ $= 90\%) \ OUR \ 2023 \ F$	$ \xrightarrow{TECN} \chi_{c1}(s) $ $ \xrightarrow{TECN} BEST LIMI $ $ \xrightarrow{BEST LIMI} BELL $ $ \xrightarrow{Total} \times [B(t) $ $ \xrightarrow{TECN} $	$\frac{COMMENT}{T}$ $B \rightarrow KD^{+}D$ $(B^{+} \rightarrow \chi_{c1})$	$\mathbf{\Gamma}_{13}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{13}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{13}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{14}/\mathbf{\Gamma}_{3}$ $\mathbf{\Gamma}_{14}/\mathbf{\Gamma}_{3}$ $\mathbf{\Gamma}_{15}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{15}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{16}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{16}/\mathbf{\Gamma}$	NODE=M176R4 NODE=M176R4;LINKAGE=A NODE=M176R06 NODE=M176R06 NODE=M176R23 NODE=M176R23 NODE=M176R23;LINKAGE=A
$\Gamma(D^+D^-)/\Gamma_{total}$ $\frac{VALUE}{<0.17 (CL = 90\%)}$ < 0.17 $^{1} CHISTOV 04 report < 4 \times 10^{-5} \text{ which} \Gamma(\pi^{0}\chi_{c2})/\Gamma(\pi^+\pi^{-1}) \frac{VALUE}{<1.1} \Gamma(\pi^{0}\chi_{c1})/\Gamma_{total} \frac{VALUE}{<0.035} ^{1} BHARDWAJ 19 \chi_{c1}(3872)K^+) = \Gamma(\pi^{0}\chi_{c1})/\Gamma(\pi^+\pi^{-1}) VALUE (units 10^{-2})$	$\frac{CL\%}{[<0.19 (CL = 90)]}$ Tts [$\Gamma(\chi_{c1}(38))$ we divide by $-J/\psi(1S))$ $\frac{CL\%}{90}$ Tthe following of 90 Teports [$\Gamma(2.3 \times 10^{-4}.)$ $=J/\psi(1S))$ EVTS	$\frac{DOCUMENT \ ID}{2}$ $\frac{DOCUMENT \ ID}{2}$ $\frac{1}{2} \text{ CHISTOV} \qquad 04$ $\frac{1}{2} \text{ CHISTOV} \qquad 04$ $\frac{1}{2} \text{ OUR 2023 F} = 0$ $\frac{1}{2} \text{ OUR 2023 F} = 0$ $\frac{1}{2} \text{ OUR 2023 F} = 0$ $\frac{DOCUMENT \ ID}{2}$ $\frac{DOCUMENT \ ID}{2}$ $\frac{DOCUMENT \ ID}{2}$ $\frac{1}{2} \text{ BHARDWAJ} \qquad 15$ $\frac{1}{2} \text{ BHARDWAJ} \qquad 15$ $\frac{1}{2} \text{ C} \chi_{c1}(3872) \rightarrow 0$ $\frac{1}{2} \text{ OUR COUMENT \ ID}$ $\frac{1}{2} \text{ OUR COUMENT \ ID}$	$\begin{array}{c} \xrightarrow{T \in CN} \\ \xrightarrow{T \in CN} \\ \text{BEST LIMI} \\ \xrightarrow{\text{BEST LIMI}} \\ \xrightarrow{\text{BEST LIMI}} \\ \xrightarrow{\text{T ECN}} \\ \xrightarrow{\text{T ECN}} \\ \xrightarrow{T \in CN} \\ \xrightarrow{\pi^0 \chi_{c1}} \\ \xrightarrow{T \in CN} \\ \xrightarrow{T \in CN} \\ \xrightarrow{T \in CN} \\ \xrightarrow{\text{T ECN}} \\ \xrightarrow{T \in CN} \\ \xrightarrow{T \to CN} $	$\frac{COMMENT}{T]} = 2.$ $\frac{COMMENT}{B \rightarrow KD^{+}D}$ $(B^{+} \rightarrow \chi_{c1}) (38)$ $(B^{$	Γ_{13}/Γ Γ_{13}/Γ Γ_{13}/Γ Γ_{13}/Γ Γ_{14}/Γ_{3} Γ_{14}/Γ_{3} Γ_{15}/Γ Γ_{15}/Γ Γ_{15}/Γ Γ_{15}/Γ_{3}	NODE=M176R4 NODE=M176R4;LINKAGE=A NODE=M176R06 NODE=M176R06 NODE=M176R23 NODE=M176R23 NODE=M176R23;LINKAGE=A NODE=M176R05
$\Gamma(D^+D^-)/\Gamma_{total}$ $\frac{VALUE}{<0.17 (CL = 90\%)}$ <0.17 $^{1} CHISTOV 04 report < 4 \times 10^{-5} \text{ which} \Gamma(\pi^0 \chi_{c2})/\Gamma(\pi^+\pi^-) \frac{VALUE}{<1.1} \Gamma(\pi^0 \chi_{c1})/\Gamma_{total} \frac{VALUE}{<0.035} ^{1} BHARDWAJ 19 \chi_{c1}(3872)K^+) = \Gamma(\pi^0 \chi_{c1})/\Gamma(\pi^+\pi^-) \frac{VALUE}{VALUE (units 10^{-2})} = 88 + 33 + 10$	$\frac{CL\%}{[<0.19 (CL = 90)]}$ rts [$\Gamma(\chi_{c1}(38))$ we divide by $\frac{-J/\psi(1S)}{90}$ $\frac{CL\%}{90}$ reports [Γ ($< 8.1 \times 10$ 2.3×10^{-4} . $= J/\psi(1S)$) $\frac{EVTS}{10.8}$	$\frac{DOCUMENT \ ID}{2}$ $\frac{DOCUMENT \ ID}{2}$ $\frac{1}{2} \text{ CHISTOV} \qquad 0.4$ $\frac{1}{2} \text{ CHISTOV} \qquad 0.4$ $\frac{1}{2} \text{ OUT} \text{ DOCUMENT \ ID}$ $\frac{DOCUMENT \ ID}{2}$ $\frac{DOCUMENT \ ID}{2}$ $\frac{1}{2} \text{ BHARDWAJ} \qquad 15$ $\frac{1}{2} \text{ BHARDWAJ} \qquad 15$ $\frac{1}{2} \text{ BHARDWAJ} \qquad 15$ $\frac{1}{2} \text{ OUT} O$	$ \xrightarrow{TECN} \chi_{c1}(s) $ $ \xrightarrow{TECN} BEST LIMI $ $ \xrightarrow{BEST LIMI} $ $ \xrightarrow{BELL} \chi_{c1}(s) $ $ \xrightarrow{TECN} $	$\frac{COMMENT}{T}$ $B \rightarrow KD^{+}D$ $(B^{+} \rightarrow \chi_{c1})$	$\mathbf{\Gamma}_{13}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{13}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{13}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{13}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{14}/\mathbf{\Gamma}_{3}$ $\mathbf{\Gamma}_{14}/\mathbf{\Gamma}_{3}$ $\mathbf{\Gamma}_{15}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{15}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{15}/\mathbf{\Gamma}_{3}$ $\mathbf{\Gamma}_{15}/\mathbf{\Gamma}_{3}$	NODE=M176R4 NODE=M176R4;LINKAGE=A NODE=M176R06 NODE=M176R06 NODE=M176R23 NODE=M176R23 NODE=M176R23;LINKAGE=A NODE=M176R05 NODE=M176R05
$\Gamma(D^+D^-)/\Gamma_{total}$ $\frac{VALUE}{<0.17 (CL = 90\%)}$ <0.17 $^{1} CHISTOV 04 reported to the equation of the e$	$\frac{CL\%}{[<0.19 (CL = 90)]}$ rts [$\Gamma(\chi_{c1}(38))$ we divide by $-J/\psi(1S))$ $\frac{CL\%}{90}$ the following of 90 reports [$\Gamma(2.3 \times 10^{-4}.)$ $= J/\psi(1S))$ $-\frac{EVTS}{10.8}$	$\frac{DOCUMENT \ ID}{2}$ $= 90\%) OUR 2023 F$ $= 90\%) OUR 2023 F$ $= 1 CHISTOV 04$ $T(2) \rightarrow D^+ D^-)/\Gamma_{1}$ $= 0 CUMENT \ ID$	$\begin{array}{c} & \chi_{c1}(s) \\ & TECN \\ BEST LIMI \\ BELL \\ total] \times [B(t) \\ & \chi_{c1}(s) \\ & \chi_{c$	$\frac{COMMENT}{T}$ $B \rightarrow KD^{+}D$ $(B^{+} \rightarrow \chi_{c1})$	$\mathbf{\Gamma}_{13}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{13}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{13}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{13}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{14}/\mathbf{\Gamma}_{3}$ $\mathbf{\Gamma}_{14}/\mathbf{\Gamma}_{3}$ $\mathbf{\Gamma}_{15}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{15}/\mathbf{\Gamma}$ $\mathbf{\Gamma}_{15}/\mathbf{\Gamma}_{3}$ $\mathbf{\Gamma}_{15}/\mathbf{\Gamma}_{3}$ $\mathbf{\Gamma}_{15}/\mathbf{\Gamma}_{3}$	NODE=M176R4 NODE=M176R4;LINKAGE=A NODE=M176R06 NODE=M176R06 NODE=M176R23 NODE=M176R23 NODE=M176R23;LINKAGE=A NODE=M176R05 NODE=M176R05
$\Gamma(D^{+}D^{-})/\Gamma_{total}$ $\frac{VALUE}{<0.17 (CL = 90\%)}$ < 0.17 ¹ CHISTOV 04 report $< 4 \times 10^{-5} \text{ which}$ $\Gamma(\pi^{0}\chi_{c2})/\Gamma(\pi^{+}\pi^{-1}\chi_{ALUE})/\Gamma(\pi^{0}\chi_{c1})/\Gamma_{total}$ $\frac{VALUE}{<1.1}$ $\Gamma(\pi^{0}\chi_{c1})/\Gamma_{total}$ $VALUE$ ••• We do not use the second s	$\frac{CL\%}{[<0.19 (CL = 90)]}$ $\frac{1}{90} \text{ (cl } = 100 \text{ (cl } = 1$	$\frac{DOCUMENT \ ID}{2}$ $\frac{DOCUMENT \ ID}{2}$ $\frac{1}{2} \text{ CHISTOV} \qquad 04$ $\frac{1}{2} \text{ CHISTOV} \qquad 04$ $\frac{1}{2} \text{ CHISTOV} \qquad 04$ $\frac{1}{2} \text{ OUT} \text{ DOCUMENT \ ID}$ $\frac{DOCUMENT \ ID}{4}$ $\frac{DOCUMENT \ ID}{4}$ $\frac{1}{2} \text{ BHARDWAJ} \qquad 15$ $\frac{1}{2} \text{ BHARDWAJ} \qquad 15$ $\frac{DOCUMENT \ ID}{4}$ $\frac{DOCUMENT \ ID}{4}$ $\frac{DOCUMENT \ ID}{4}$ $\frac{DOCUMENT \ ID}{4}$	$\begin{array}{c} \xrightarrow{TECN} \\ \xrightarrow{TECN} \\ \end{array} \\ \begin{array}{c} \xrightarrow{TECN} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \xrightarrow{TECN} \\ \end{array} \\ \end{array} $	$\frac{COMMENT}{T}$ $B \rightarrow KD^{+}D$ $(B^{+} \rightarrow \chi_{c1})$	3×10^{-4} . Γ_{13}/Γ Γ_{3}/Γ 3×10^{-4} . Γ_{14}/Γ_{3} $\Gamma_{c1}(3872)$ Γ_{15}/Γ Γ_{15}/Γ Γ_{15}/Γ_{3} $\Gamma_{c1}(3872)$ Γ_{16}/Γ_{3}	NODE=M176R4 NODE=M176R4;LINKAGE=A NODE=M176R06 NODE=M176R06 NODE=M176R23 NODE=M176R23;LINKAGE=A NODE=M176R05 NODE=M176R05 NODE=M176R05
$\Gamma(D^{+}D^{-})/\Gamma_{total}$ $\frac{VALUE}{<0.17 (CL = 90\%)}$ <0.17 $^{1} CHISTOV 04 reported to the equation of t$	$\frac{CL\%}{[<0.19 (CL = 90)]}$ rts [$\Gamma(\chi_{c1}(38))$ we divide by $-J/\psi(1S))$ $\frac{CL\%}{90}$ reports [$\Gamma(2.3 \times 10^{-4})$ $-J/\psi(1S))$ $-\frac{EVTS}{10.8}$ $-J/\psi(1S))$ $\frac{CL\%}{90}$	$\frac{DOCUMENT \ ID}{2}$ $= 90\%) OUR 2023 F$ $= 90\%) OUR 2023 F$ $= 10\% OVR 2023 F$	$\begin{array}{c} \xrightarrow{TECN} \\ \xrightarrow{TECN} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	$\frac{COMMENT}{T} = 2.$ $\frac{COMMENT}{B \rightarrow KD^{+}D}$ $\frac{B^{+} \rightarrow \chi_{c1}(36)}{(B^{+} \rightarrow \chi_{c1}(36))} = 2.$ $\frac{COMMENT}{e^{+}e^{-} \rightarrow \gamma \chi}$ $\frac{COMMENT}{tc. \bullet \bullet}$ $B^{\pm} \rightarrow \pi^{0}\chi_{c}$ $T_{total} = \chi = 1$ $\frac{COMMENT}{e^{+}e^{-} \rightarrow \gamma \chi}$ $\frac{COMMENT}{e^{+}e^{-} \rightarrow \gamma \chi}$	3×10^{-4} . Γ_{13}/Γ Γ_{3}/Γ Γ_{3}/Γ Γ_{14}/Γ_{3} Γ_{15}/Γ Γ_{15}/Γ Γ_{15}/Γ_{3} Γ_{15}/Γ_{3} Γ_{16}/Γ_{3} Γ_{16}/Γ_{3}	NODE=M176R4 NODE=M176R4 NODE=M176R4;LINKAGE=A NODE=M176R06 NODE=M176R03 NODE=M176R23 NODE=M176R23;LINKAGE=A NODE=M176R05 NODE=M176R05 NODE=M176R04 NODE=M176R04
$\Gamma(D^+D^-)/\Gamma_{total}$ $\frac{VALUE}{<0.17 (CL = 90\%)} < 0.17 (CL = 90\%) < 0.17$ $^{1} CHISTOV 04 report < 4 \times 10^{-5} which \Gamma(\pi^{0}\chi_{c2})/\Gamma(\pi^+\pi^-) < 0.035 ^{1} BHARDWAJ 19 \chi_{c1}(3872) K^+) = \Gamma(\pi^{0}\chi_{c1})/\Gamma(\pi^+\pi^-) \chi_{c1}(3872) K^+) = \Gamma(\pi^{0}\chi_{c1})/\Gamma(\pi^+\pi^-) VALUE (units 10^{-2}) 88^{+33}_{-27} \pm 10 \Gamma(\pi^{0}\chi_{c0})/\Gamma(\pi^+\pi^-) VALUE < 3.6 ••• We do not use to the set of t$	$\frac{CL\%}{[<0.19 (CL = 90)]}$ Tts [$\Gamma(\chi_{c1}(38))$ we divide by - $J/\psi(1S)$) $\frac{CL\%}{90}$ $\frac{CL\%}{90}$ $\frac{CL\%}{90}$ $\frac{CL\%}{90}$ the following of 90 $reports$ [$\Gamma(2,3 \times 10^{-4}, 15))$ $\frac{EVTS}{10.8}$ $= J/\psi(1S)$) $\frac{CL\%}{90}$ the following of 90 $\frac{CL\%}{90}$ $\frac{CL\%}{90}$ $\frac{CL\%}{90}$ $\frac{CL\%}{90}$ $\frac{CL\%}{90}$ $\frac{CL\%}{90}$	$\frac{DOCUMENT \ ID}{2}$ $= 90\%) OUR 2023 F$ $= 90\%) OUR 2023 F$ $= 1 CHISTOV 04$ $T2) \rightarrow D^+ D^-)/\Gamma_{1}$ $Our best value B(B^-)$ $= \frac{DOCUMENT \ ID}{ABLIKIM 19}$	$ \xrightarrow{TECN} \chi_{c1}(s) $ $ \xrightarrow{TECN} BEST LIMI $ $ \xrightarrow{BEST LIMI} $ $ \xrightarrow{BEST LIMI} $ $ \xrightarrow{BELL} $ $ \xrightarrow{TECN} $	$\frac{COMMENT}{T}$ $B \rightarrow KD^{+}D$ $(B^{+} \rightarrow \chi_{c1})$	3×10^{-4} . Γ_{13}/Γ Γ_{3}/Γ 3×10^{-4} . Γ_{14}/Γ_{3} $c_{1}(3872)$ Γ_{15}/Γ Γ_{15}/Γ Γ_{15}/Γ_{3} $c_{1}(3872)$ Γ_{16}/Γ_{3} r_{16}/Γ_{3}	NODE=M176R4 NODE=M176R4;LINKAGE=A NODE=M176R06 NODE=M176R06 NODE=M176R23 NODE=M176R23;LINKAGE=A NODE=M176R05 NODE=M176R05 NODE=M176R05

$\frac{\Gamma(\pi^+\pi^-\eta_c(1S))}{\sqrt{13}}$	total	<u>DOCUMENT ID</u> = 90%) OUR 20	0 <u>TECN</u> 023 BEST LIN	_ <u>COMMENT</u> /IT]	Γ ₁₇ /Γ	NODE=M176R22 NODE=M176R22
<0.13 ¹ VINOKUROVA 15 $\chi_{c1}(3872) K^+)] < \chi_{c1}(3872) K^+) =$	90 reports [Γ $< 3.0 \times 10^{-4}$ 2.3×10^{-4}	$(\chi_{c1}(3872) \rightarrow 10^{-5}$ which we	/A 15 BELL $\pi^+\pi^-\eta_c(1)$	$B^+ ightarrow \pi^+$ $S))/\Gamma_{total}] imes$		NODE=M176R22;LINKAGE=A
$\Gamma(\pi^0 \pi^0 \chi_{c0}) / \Gamma(\pi^+ \chi_{LUE})$	⁻ π ⁻ J/ψ(1 ^{<u>CL%</u> 90}	S)) <u>DOCUMENT ID</u> ABLIKIM	<u>7ECN</u> 22D BES3	$\frac{COMMENT}{e^+e^- \rightarrow c^+}$	$\frac{\Gamma_{18}/\Gamma_3}{\chi_{c1}(3872)}$	NODE=M176R28 NODE=M176R28
$\frac{\Gamma(\pi^+\pi^-\chi_{c0})}{\frac{VALUE}{<0.56}}$	⁺ π ⁻ J/ψ(15)) <u>DOCUMENT ID</u> ABLIKIM	22D BES3	$\frac{COMMENT}{e^+e^-} \rightarrow c$	Γ_{19}/Γ_{3}	NODE=M176R29 NODE=M176R29
$\frac{\Gamma(\pi^+\pi^-\chi_{c1})}{V_{ALUE}}/\Gamma_{tot;}$	al <u>CL%</u>	DOCUMENT ID	<u> </u>	<u>COMMENT</u> B+ _ m+	$\frac{\Gamma_{20}/\Gamma}{\pi^{-}\chi + K^{+}}$	NODE=M176R00 NODE=M176R00
¹ BHARDWAJ 16 $\chi_{c1}(3872) K^{+})] < \chi_{c1}(3872) K^{+}) =$	reports [Γ (< 1.5 × 1 2.3 × 10 ⁻⁴	$(\chi_{c1}(3872) \rightarrow 10^{-6}$ which we	$\pi^+\pi^-\chi_{c1}$ e divide by c	$D^{+} \rightarrow \pi^{+}$ $D^{+} \Gamma_{total} = X$ pur best value	$\begin{bmatrix} B(B^+ \to B(B^+ \to$	NODE=M176R00;LINKAGE=A
$\frac{\Gamma(p\bar{p})}{\Gamma_{\text{total}}}$	<u> </u>	$\frac{DOCUMENT}{10-5}$	<u>ID TECI</u>	<u>COMMENT</u>	Γ ₂₁ /Γ	NODE=M176R03 NODE=M176R03
<2.2 × 10 • (CL = 9 <2.2 × 10 ⁻⁵ • • • We do not use t	95%) [<2.4 95 he following:	4×10^{-9} (CL = $\frac{1}{1}$ AAIJ ; data for average	17AD LHC es, fits, limits,	$B B^+ \rightarrow p\bar{p}$ etc. • • •	σ <i>K</i> +	SYCLP=A
$< 7 \times 10^{-5}$	95	² AAIJ	13s LHC	$B B^+ \rightarrow p\bar{p}$	σK ⁺	SYCLP=A
1 AAIJ 17AD reports 0.5 $ imes$ 10 $^{-8}$ which v	s [$\Gamma(\chi_{c1}(38))$ we divide by	72) $\rightarrow p \overline{p}) / \Gamma_{t}$ our best value B	$_{\text{otal}}$ × [B(B) B(B ⁺ $\rightarrow \chi_{c1}$	$^+ \rightarrow ~\chi_{c1}(38)$ (3872) $K^+) =$	$(72) K^+)] < 2.3 \times 10^{-4}.$	NODE=M176R03;LINKAGE=C
² AAIJ 13S reports [F 10 ⁻⁸ which we div	$(\chi_{c1}(3872))$ (x, $\chi_{c1}(3872)$	$ ho ightarrow ho \overline{ ho} / \Gamma_{total}$	$ \times [B(B^+ \rightarrow \chi_{c1}(387))] \times [B(B^+ \rightarrow \chi_{c1}(387))] \times [B(B^+ \rightarrow \chi_{c1}(387))]$	$\chi_{c1}(3872) K^{-1}$ 2) K^{+}) = 2.3	$^{+})] < 1.7 \times 10^{-4}$.	NODE=M176R03;LINKAGE=B
² AAIJ 13S reports [F 10 ⁻⁸ which we div	$(\chi_{c1}(3872))$ wide by our b	$p \rightarrow p\overline{p})/\Gamma_{total}$ post value $B(B^+)$ Radiative de	$ \times [B(B^+ \rightarrow \chi_{c1}(387) + \chi_{c1}(387)])$	$\chi_{c1}(3872) K^{-1}$	$^{+})] < 1.7 \times 10^{-4}.$	NODE=M176R03;LINKAGE=B NODE=M176410
² AAIJ 13S reports [Γ 10 ⁻⁸ which we div $\Gamma(\gamma D^+ D^-)/\Gamma(\pi^+ VALUE)$	$\pi^{-}(\chi_{c1}(3872))$ χ_{ide} by our b $\pi^{-}J/\psi(1)$ $\chi_{cL\%}$	$(\rightarrow \rho \overline{p}) / \Gamma_{total}$ post value $B(B^+)$ Radiative den S)) <u>DOCUMENT ID</u>	$[B(B^+ \rightarrow \chi_{c1}(387))] \times [B(B^+ \rightarrow \chi_{c1}(387))]$ Cays \underline{TECN}	$\chi_{c1}(3872) K^{-}$ 2) K^{+}) = 2.3	⁺)] < 1.7× × 10 ⁻⁴ . Γ₂₂/Γ₃	NODE=M176R03;LINKAGE=B NODE=M176410 NODE=M176R20 NODE=M176R20
² AAIJ 13S reports [Γ 10 ⁻⁸ which we div $\Gamma(\gamma D^+ D^-)/\Gamma(\pi^+ \frac{VALUE}{< 0.99})$	$\pi^{-}(\chi_{c1}(3872))$ <i>i</i> de by our b $\pi^{-}J/\psi(1)$ <u>CL%</u> 90	$(\rightarrow \rho \overline{p}) / \Gamma_{total}$ post value $B(B^+)$ Radiative dentify S)) <u>DOCUMENT ID</u> ABLIKIM	$[B(B^+ \rightarrow \chi_{c1}(387 \rightarrow \chi_{c1}($	$\chi_{c1}(3872) K^{-1}$ $\chi_{c1}(3872) K^{-1} = 2.3 \pm \frac{1}{2}$ $- \frac{COMMENT}{e^{+}e^{-} \rightarrow 2}$	$(+)] < 1.7 \times 10^{-4}$. Γ_{22}/Γ_3	NODE=M176R03;LINKAGE=B NODE=M176410 NODE=M176R20 NODE=M176R20
² AAIJ 13S reports [Γ 10 ⁻⁸ which we div $\Gamma(\gamma D^+ D^-)/\Gamma(\pi^+ VALUE)$ <0.99 $\Gamma(\gamma \overline{D}^0 D^0)/\Gamma(\pi^+ \pi VALUE)$ <158	$\pi^{-} J/\psi(1)$ $\pi^{-} J/\psi(1)$ $\pi^{-} J/\psi(1)$ $\pi^{-} J/\psi(1)$ $\pi^{-} J/\psi(1)$	$p \rightarrow p \overline{p} / \Gamma_{\text{total}}$ pest value $B(B^+$ Radiative der S)) <u>DOCUMENT ID</u> ABLIKIM <u>DOCUMENT ID</u> ABLIKIM	$[] \times [B(B^+ \rightarrow T_{c1}(387) \rightarrow \chi_{c1}(387)]$ $[] (a) (a) (a) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c$	$\chi_{c1}(3872)K^{+}$ $2)K^{+}) = 2.32$ $-$ $\frac{COMMENT}{e^{+}e^{-} \rightarrow c^{-}}$ $- \frac{COMMENT}{e^{+}e^{-} \rightarrow c^{-}}$	⁺)] < 1.7× × 10 ⁻⁴ . Γ_{22}/Γ_3 $\overline{\gamma \chi_{c1}(3872)}$ Γ_{23}/Γ_3	NODE=M176R03;LINKAGE=B NODE=M176410 NODE=M176R20 NODE=M176R20 NODE=M176R21 NODE=M176R21
² AAIJ 13S reports [Γ 10 ⁻⁸ which we div $\Gamma(\gamma D^+ D^-)/\Gamma(\pi^+ M_{ALUE})$ <0.99 $\Gamma(\gamma \overline{D}^0 D^0)/\Gamma(\pi^+ \pi M_{VALUE})$ <1.58 $\Gamma(\gamma J/\psi)/\Gamma_{total}$ <i>VALUE</i> (units 10 ⁻³)	$\pi^{-} J/\psi(1)$ $\pi^{-} J/\psi(1)$ $\pi^{-} J/\psi(1)$ $\pi^{-} J/\psi(1)$ $\pi^{-} J/\psi(1)$	$p \rightarrow p \overline{p} / \Gamma_{total}$ pest value $B(B^+$ Radiative der S)) <u>DOCUMENT ID</u> ABLIKIM <u>DOCUMENT ID</u> ABLIKIM <u>DOCUMENT</u>	$\begin{bmatrix} \times [B(B^+ \rightarrow \chi_{c1}(387 \rightarrow \chi$	$\chi_{c1}(3872) K^{+}$ $2) K^{+}) = 2.3 \pm \frac{1}{2}$ $-\frac{COMMENT}{e^{+}e^{-} \rightarrow c^{-}}$ $-\frac{COMMENT}{e^{+}e^{-} \rightarrow c^{-}}$ $N \qquad COMMENT$	⁺)] < $1.7 \times \times 10^{-4}$. F ₂₂ / F ₃ $\overline{\gamma \chi_{c1}(3872)}$ F ₂₃ / F ₃ $\overline{\gamma \chi_{c1}(3872)}$ F ₂₄ / F	NODE=M176R03;LINKAGE=B NODE=M176410 NODE=M176R20 NODE=M176R20 NODE=M176R21 NODE=M176R21 NODE=M176R7
² AAIJ 13S reports [Γ 10 ⁻⁸ which we div $\Gamma(\gamma D^+ D^-)/\Gamma(\pi^+ M_{ALUE})$ <0.99 $\Gamma(\gamma \overline{D}^0 D^0)/\Gamma(\pi^+ \pi M_{ALUE})$ <1.58 $\Gamma(\gamma J/\psi)/\Gamma_{total}$ <u>VALUE (units 10^-3)</u> 7.8±2.9 OUR AVER/ 7.8 ⁺ 2.0±2.0	$\pi^{-} J/\psi(1)$	$p \rightarrow p \overline{p} / \Gamma_{\text{total}}$ $pest value B(B^+$ $Radiative destination B(B^+)$ $\frac{DOCUMENT ID}{ABLIKIM}$ $\frac{DOCUMENT ID}{ABLIKIM}$ $\frac{DOCUMENT ID}{ABLIKIM}$ $\frac{DOCUMENT ID}{ABLIKIM}$ $\frac{DOCUMENT}{B} \pm 0.004 \text{ OUR}$	$\begin{bmatrix} \times [B(B^+ \rightarrow \chi_{c1}(387 \rightarrow \chi$	$\chi_{c1}(3872) K^{+}$ $(2) K^{+} = 2.3 \pm 2$	⁺)] < 1.7× × 10 ⁻⁴ . Γ_{22}/Γ_3 $\gamma \chi_{c1}(3872)$ Γ_{23}/Γ_3 $\gamma \chi_{c1}(3872)$ Γ_{24}/Γ	NODE=M176R03;LINKAGE=B NODE=M176410 NODE=M176R20 NODE=M176R21 NODE=M176R21 NODE=M176R7 NODE=M176R7 NODE=M176R7 NEW SYCLP=A
² AAIJ 13S reports [Γ 10 ⁻⁸ which we div $\Gamma(\gamma D^+ D^-)/\Gamma(\pi^+ M^-)/\Gamma(\pi^+ m^-)/\Gamma(\pi^+)/\Gamma(\pi^$	$\pi^{-} J/\psi(1)$	$p \rightarrow p \overline{p} / \Gamma_{total}$ $post value B(B^+$ Radiative de S)) $\frac{DOCUMENT ID}{ABLIKIM}$ $\frac{DOCUMENT ID}{ABLIKIM}$ $\frac{DOCUMENT ID}{ABLIKIM}$ $\frac{DOCUMENT}{B} \pm 0.004 \text{ OUR}$ 1 BHARDWA $(data for average)$	$\begin{bmatrix} \times [B(B^+ \rightarrow \chi_{c1}(387 \rightarrow \chi$	$\chi_{c1}(3872) K^{+}$ $(2) K^{+} = 2.3 \pm 2$	⁺)] < 1.7 × × 10 ⁻⁴ . Γ_{22}/Γ_3 $\gamma \chi_{c1}(3872)$ Γ_{23}/Γ_3 $\gamma \chi_{c1}(3872)$ Γ_{24}/Γ $J/\psi K^{\pm}$	NODE=M176R03;LINKAGE=B NODE=M176410 NODE=M176R20 NODE=M176R20 NODE=M176R21 NODE=M176R21 NODE=M176R7 NODE=M176R7 NODE=M176R7 NEW SYCLP=A
² AAIJ 13S reports [Γ 10 ⁻⁸ which we div $\Gamma(\gamma D^+ D^-)/\Gamma(\pi^+ M^-)/\Gamma(\pi^+ M^-)/\Gamma(\pi^+)/\Gamma(\pi^+ M^-)/\Gamma(\pi^+ M^-)/\Gamma(\pi^+ M^-)/\Gamma(\pi^+ M^-)/\Gamma(\pi^+ M^-)/\Gamma(\pi^+ M^-)/\Gamma(\pi^+ M^-)/\Gamma(\pi^+)/\Gamma(\pi^+)/\Gamma(\pi^+ M^-)/\Gamma(\pi^+)/\Gamma(\pi$	$\pi^{-} J/\psi(1)$	$p \rightarrow p \overline{p} / \Gamma_{total}$ $post value B(B^+$ Radiative der S)) $\frac{DOCUMENT ID}{ABLIKIM}$ $\frac{DOCUMENT ID}{ABLIKIM}$ $\frac{DOCUMENT ID}{ABLIKIM}$ $\frac{DOCUMENT}{3 \pm 0.004 \text{ OUR S}}$ $\frac{1}{3} \text{ BHARDWA}$ $\frac{2}{3} \text{ AUBERT}$	$\begin{bmatrix} \times [B(B^+ \rightarrow \chi_{c1}(387 \rightarrow \chi$	$\chi_{c1}(3872) K^{+}$ $2) K^{+}) = 2.3 \pm \frac{1}{2}$ $-\frac{COMMENT}{e^{+}e^{-} \rightarrow \gamma}$ $-\frac{COMMENT}{e^{+}e^{-} \rightarrow \gamma}$ $K_{E} = \frac{COMMENT}{e^{+}e^{-} \rightarrow \gamma}$	+)] < $1.7 \times \times 10^{-4}$. F ₂₂ / F ₃ $\gamma \chi_{c1}(3872)$ F ₂₃ / F ₃ $\overline{\gamma \chi_{c1}(3872)}$ F ₂₄ / F $J/\psi K^{\pm}$ $J/\psi K^{+}$	NODE=M176R03;LINKAGE=B NODE=M176410 NODE=M176R20 NODE=M176R21 NODE=M176R21 NODE=M176R7 NODE=M176R7 NODE=M176R7 NEW SYCLP=A SYCLP=A SYCLP=A
² AAIJ 13S reports [Γ 10 ⁻⁸ which we div $\Gamma(\gamma D^+ D^-)/\Gamma(\pi^+ \sqrt{24UE})$ <0.99 $\Gamma(\gamma \overline{D}^0 D^0)/\Gamma(\pi^+ \pi \sqrt{24UE})$ <1.58 $\Gamma(\gamma J/\psi)/\Gamma_{total}$ <u>VALUE (units 10⁻³)</u> 7.8±2.9 OUR AVER/ 7.8+2.2 $\tau_{-2.0}$ • • We do not use t 12.2±3.5±3.2 14 ±5 ±4 ¹ BHARDWAJ 11 rep = (1.78+0.48 ±	$\pi^{-} J/\psi(1)$ $\pi^{-} J/\psi(1)$ $\frac{CL\%}{90}$ $\pi^{-} J/\psi(1S)$ $\frac{CL\%}{90}$ $\pi^{-} J/\psi(1S)$ $\frac{CL\%}{90}$ $\frac{EVTS}{4GE} [0.008]$ whe following 20 19 ports [$\Gamma(\chi_{c1})$ $0.12) \times 10$	$p \rightarrow p \overline{p} / \Gamma_{total}$ $post value B(B^+$ Radiative der Radiative der S)) $\frac{DOCUMENT ID}{ABLIKIM}$ $\frac{DOCUMENT ID}{ABLIKIM}$ $\frac{DOCUMENT ID}{ABLIKIM}$ $\frac{DOCUMENT}{1}$ $\frac{BHARDWA}{1}$ $\frac{1}{3} AUBERT, B$ $\frac{(3872) \rightarrow \gamma J/v}{0^{-6}}$ which we	$ \times [B(B^+ \rightarrow \chi_{c1}(387 \rightarrow \chi_{$	$\chi_{c1}(3872) K^{+}$ $\chi_{c1}(3872) K^{+} = 2.3 \pm 2.3 $	⁺)] < 1.7× × 10 ⁻⁴ . Γ₂₂/Γ₃ $7\chi_{c1}(3872)$ Γ₂₃/Γ₃ $7\chi_{c1}(3872)$ Γ₂₄/Γ <i>J/ψ K</i> [±] <i>J/ψ K</i> [±] <i>J/ψ K</i> [±] <i>S</i> (3872) <i>K</i> ⁺)] ∴ B(B ⁺ → M)	NODE=M176R03;LINKAGE=B NODE=M176410 NODE=M176R20 NODE=M176R21 NODE=M176R21 NODE=M176R7 NODE=M176R7 NEW SYCLP=A SYCLP=A SYCLP=A NODE=M176R7;LINKAGE=BA
² AAIJ 13S reports [Γ 10 ⁻⁸ which we div $\Gamma(\gamma D^+ D^-)/\Gamma(\pi^+ M^+ M^+ D^-)/\Gamma(\pi^+ M^+ M^+ D^-)/\Gamma(\pi^+ M^+ M^+ D^-)/\Gamma(\pi^+ M^+ D^+ D^-)$ 	$\pi^{-} J/\psi(1.5)$	$p \rightarrow p \overline{p} / \Gamma_{\text{total}}$ $pest value B(B^+$ Radiative der Radiative der S)) $\frac{DOCUMENT ID}{\text{ABLIKIM}}$ $\frac{DOCUMENT ID}{\text{ABLIKIM}}$ $\frac{DOCUMENT ID}{\text{ABLIKIM}}$ $\frac{DOCUMENT ID}{\text{ABLIKIM}}$ $\frac{DOCUMENT}{3} \pm 0.004 \text{ OUR S}$ 1 BHARDWA $(341a \text{ for averag}$ 2 AUBERT 3 AUBERT,B $(3872) \rightarrow \gamma J/\psi$ 0^{-6} which we $(3872) \rightarrow \gamma J/\psi$ ich we divide by of st error is their error is	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\chi_{c1}(3872) K^{+}$ $(2) K^{+} = 2.3 \pm 2$	+)] < $1.7 \times \times 10^{-4}$. F ₂₂ / F ₃ $\overline{\mathbf{F}_{22}/\mathbf{F}_3}$ $\overline{\mathbf{F}_{23}/\mathbf{F}_3}$ $\overline{\mathbf{F}_{23}/\mathbf{F}_3}$ $\overline{\mathbf{F}_{24}/\mathbf{F}}$ $J/\psi K^{\pm}$ $J/\psi K^{\pm}$ $(3872) K^{+})]$ $\approx B(B^{\pm} \rightarrow \pm 1)^{(3872)} K^{+})$ $(3872) K^{+})$ $(3872) K^{+})$ $(3872) K^{+})$ $(3872) K^{+})$ $(3872) K^{+})$ $(3872) K^{+})$ $(3872) K^{+})$	NODE=M176R03;LINKAGE=B NODE=M176410 NODE=M176R20 NODE=M176R21 NODE=M176R21 NODE=M176R7 NODE=M176R7 NEW SYCLP=A SYCLP=A SYCLP=A NODE=M176R7;LINKAGE=BA

ABLIKIM 20W RES3 $a^+a^- \rightarrow \gamma\gamma = (38^-)$	(2)
, BERRINI 2000 BESS & C / / X _C I(35)	2) /F
25 DOCUMENT ID TECN COMMENT	/I NODE=M176R08 NODE=M176R08
$(10^{-3} (CL = 90\%) OUR 2023 BEST LIMIT]$	
¹ BHARDWAJ 13 BELL $B^{\pm} o \chi_{c1} \gamma K^{\pm}$	
$(1(3872) \rightarrow \gamma \chi_{c1})/\Gamma_{\text{total}}] \times [B(B^+ \rightarrow \chi_{c1}(3872) K)]$	+)] NODE=M176R08;LINKAGE=B
by our best value B($B^+ \rightarrow \chi_{c1}(3872)K^+$) = 2.3×10 ⁻¹	-4
) Γ ₂₅ /	Γ ₃ NODE=M176R1
DOCUMENT ID TECN	NODE=M176R1
CHOI 03 BELL $B \rightarrow K \pi^+ \pi^- J/\psi$	
Г ₂₆	/ Г NODE=M176R01
DOCUMENT ID TECN COMMENT	NODE=M176R01
CL = 90% OUR 2023 BEST LIMIT	
$ = \text{DHARDWAJ} \text{IS} \text{DELL} B^- \to \chi_{c2} \gamma K^- $	+)
$\begin{array}{c} 1(3072) \rightarrow \gamma \chi_{c2} / \gamma \text{ total}] \times [B(B^+ \rightarrow \chi_{c1}(3072) K^+) = 2.3 \times 10^{-1} \\ \text{by our best value B} (B^+ \rightarrow \chi_{c1}(3872) K^+) = 2.3 \times 10^{-1} \\ \end{array}$	-4 -4
Г ₂₇	/Г NODE=M176R10
<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u> BEST LIMIT1	NODE=M176R10
¹ AAIJ 14AH LHCB $B^+ \rightarrow \gamma \psi(2S) K$	+
g data for averages, fits, limits, etc. • • •	
² BHARDWAJ 11 BELL $B^+ \rightarrow \gamma \psi(2S) K$	+
SAUBERI 098 BABR $B^+ \rightarrow \gamma \psi(25) K$	T
$_{11}(3872) ightarrow J/\psi\gamma$ decays with a statistical significance	NODE=M176R10;LINKAGE=A
	,
$ \rightarrow \kappa^+ \chi_{c1}(3872)) \times B(\chi_{c1} \rightarrow \gamma \psi(2S)) < 3.45 \times 10^{-10} $	-6 NODE=M176R10;LINKAGE=B
$ \stackrel{\bullet}{\rightarrow} \kappa^{+}\chi_{c1}(3872)) \times B(\chi_{c1} \rightarrow \gamma\psi(25)) < 3.45 \times 10 $ $ \stackrel{(3872)}{\rightarrow} \gamma\psi(25))/\Gamma_{total}] \times [B(B^{+} \rightarrow \chi_{c1}(3872)\kappa^{-1})] $	-6 NODE=M176R10;LINKAGE=B
$\begin{array}{l} \stackrel{-}{\rightarrow} & \mathcal{K}^{+}\chi_{c1}(3872)) \times B(\chi_{c1} \rightarrow \gamma\psi(2S)) < \ 3.45 \times 10\\ \hline (3872) \rightarrow & \gamma\psi(2S))/\Gamma_{total}] \times [B(B^{+} \rightarrow \chi_{c1}(3872))\mathcal{K})\\ \hline hich \text{ we divide by our best value } B(B^{+} \rightarrow \chi_{c1}(3872))\mathcal{K}) \end{array}$	<pre>-6 NODE=M176R10;LINKAGE=B +)] NODE=M176R10;LINKAGE=A +)</pre>
$ \begin{array}{l} \rightarrow \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	<pre>-6 NODE=M176R10;LINKAGE=B +)] NODE=M176R10;LINKAGE=A +) r is</pre>
$\Gamma \rightarrow K^+ \chi_{c1}(3872)) \times B(\chi_{c1} \rightarrow \gamma \psi(2S)) < 3.45 \times 10$ $(3872) \rightarrow \gamma \psi(2S)) / \Gamma_{total}] \times [B(B^+ \rightarrow \chi_{c1}(3872)) K^-$ hich we divide by our best value $B(B^+ \rightarrow \chi_{c1}(3872)) K^-$ irst error is their experiment's error and our second error ing our best value.	<pre>-6 NODE=M176R10;LINKAGE=B +)] NODE=M176R10;LINKAGE=A +) r is</pre>
$\begin{array}{l} \xrightarrow{\Gamma} \rightarrow \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	<pre>-6 NODE=M176R10;LINKAGE=B +)] NODE=M176R10;LINKAGE=A +) r is r is r 3 NODE=M176R19 NODE=M176R19 NODE=M176R19</pre>
$ \begin{array}{l} \xrightarrow{\Gamma} \rightarrow K^{+}\chi_{c1}(3872)) \times B(\chi_{c1} \rightarrow \gamma\psi(2S)) < 3.45 \times 10 \\ (3872) \rightarrow \gamma\psi(2S))/\Gamma_{\text{total}}] \times [B(B^{+} \rightarrow \chi_{c1}(3872)K)] \\ \text{hich we divide by our best value } B(B^{+} \rightarrow \chi_{c1}(3872)K)] \\ \text{irst error is their experiment's error and our second error is our best value.} \\ \textbf{5))} \\ \hline \begin{array}{c} DOCUMENT \ ID \\ \hline \Delta R L K IM \\ \end{array} \\ \xrightarrow{200} 2000 \\ \hline \end{array} \\ \begin{array}{c} \overline{RES3} \\ \overline{C} \overset{OMMENT}{\overline{C}} \\ \xrightarrow{C} \end{array} \\ \begin{array}{c} \overline{C} C C M E C C C C C C C C$	Γ_{3} NODE=M176R10;LINKAGE=B NODE=M176R10;LINKAGE=A NODE=M176R10;LINKAGE=A NODE=M176R19 NODE=M176R19 NODE=M176R19
$\begin{array}{c} \rightarrow \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	Γ_{3} Γ_{2} $NODE=M176R10;LINKAGE=B$ $NODE=M176R10;LINKAGE=A$ $NODE=M176R10;LINKAGE=A$ $NODE=M176R19$ $NODE=M176R19$
$\begin{array}{c} \rightarrow \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	$ \begin{array}{c} -6 \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{B} \\ \text{H} \\ H$
$ \begin{array}{c} \rightarrow \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	$ \begin{array}{c} -6 \\ \text{NODE}=M176R10; \text{LINKAGE}=B \\ \text{NODE}=M176R10; \text{LINKAGE}=A \\ +) \\ \text{r is} \\ \end{array} \\ \begin{array}{c} \text{NODE}=M176R10 \\ \text{NODE}=M176R19 \\ \text{NODE}=M176R11 \\ \text{NODE}=M176R11 \\ \text{NODE}=M176R11 \\ \end{array} $
$F \rightarrow K^{+}\chi_{c1}(3872)) \times B(\chi_{c1} \rightarrow \gamma\psi(2S)) < 3.45 \times 10$ $(3872) \rightarrow \gamma\psi(2S))/\Gamma_{total}] \times [B(B^{+} \rightarrow \chi_{c1}(3872)K)]$ hich we divide by our best value $B(B^{+} \rightarrow \chi_{c1}(3872)K)$ first error is their experiment's error and our second error and our second error and our best value. $S)) \qquad \Gamma_{27}/\mu_{ABLIKIM} \qquad 20W BES3 \qquad e^{+}e^{-} \rightarrow \gamma\chi_{c1}(3872)K]$ $\frac{DOCUMENT ID}{POCUMENT ID} \qquad TECN \qquad COMMENT$ g data for averages, fits, limits, etc. • • • ABLIKIM \qquad 20W BES3 \qquad e^{+}e^{-} \rightarrow \gamma\chi_{c1}(3872)K]	$ \begin{array}{c} -6 \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{B} \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{A} \\ +) \\ \text{r is} \\ \end{array} \\ \begin{array}{c} \text{NODE}=\text{M176R10} \\ \text{NODE}=\text{M176R19} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11} \\ \end{array} \\ \end{array} $
$\begin{array}{c} \rightarrow \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	$\begin{array}{c} -6 \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{B} \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{A} \\ +) \\ \text{r is} \\ \end{array}$ $\begin{array}{c} \textbf{F_3} \\ \text{NODE}=\text{M176R19} \\ \text{NODE}=\text{M176R19} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11} \\ \end{array}$
$\begin{array}{c} \rightarrow \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	$\begin{array}{c} -6 \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{B} \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{A} \\ +) \\ \text{r is} \\ \hline \textbf{T_3} \\ \text{NODE}=\text{M176R19} \\ \text{NODE}=\text{M176R19} \\ \text{Y2} \\ \hline \textbf{24} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11} \\ \end{array}$
$\begin{array}{c} \rightarrow \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	$ \begin{array}{c} -6 \\ \text{NODE}=\text{M176R10; LINKAGE}=B \\ \text{NODE}=\text{M176R10; LINKAGE}=A \\ +) \\ \text{r is} \\ \hline \textbf{T_3} \\ \text{NODE}=\text{M176R19} \\ \text{NODE}=\text{M176R19} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11} \\ \end{array} $
$\begin{array}{c} \rightarrow \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	$ \begin{array}{c} -6 \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{B} \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{A} \\ +) \\ \text{r is} \\ \hline \mathbf{r}_{3} \\ \text{NODE}=\text{M176R10} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11; LINKAGE}=\text{A} \\ \end{array} $
$ \begin{array}{l} \rightarrow \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	$\begin{array}{c} -6 \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{B} \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{A} \\ +) \\ \text{r is} \\ \textbf{r}_{3} \\ \text{NODE}=\text{M176R10} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11; LINKAGE}=\text{A} \\ \text{NODE}=\text{M176R11; LINKAGE}=\text{A} \\ \text{NODE}=\text{M176R11; LINKAGE}=\text{A} \\ \text{NODE}=\text{M176R11; LINKAGE}=\text{A} \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{A} \\ \text{NODE}=M17$
$F \rightarrow K^{+}\chi_{c1}(3872)) \times B(\chi_{c1} \rightarrow \gamma\psi(2S)) < 3.45 \times 10$ $(3872) \rightarrow \gamma\psi(2S))/\Gamma_{total}] \times [B(B^{+} \rightarrow \chi_{c1}(3872)K)]$ hich we divide by our best value $B(B^{+} \rightarrow \chi_{c1}(3872)K)$ irst error is their experiment's error and our second error is our best value. S)) Γ_{27}/I $\frac{DOCUMENT \ ID}{ABLIKIM} \qquad 20w \ BES3 \qquad e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)$ F_{27}/I $\frac{DOCUMENT \ ID}{ID} \qquad \frac{TECN}{e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)}$ $G_{1} = \frac{DOCUMENT \ ID}{ID} \qquad \frac{TECN}{I} \qquad \frac{COMMENT}{I}$ $G_{2} = \frac{DOCUMENT \ ID}{I} \qquad \frac{TECN}{I} \qquad \frac{COMMENT}{I}$ $G_{1} = \frac{1}{2} + 1$	 -6 NODE=M176R10;LINKAGE=B +)] NODE=M176R10;LINKAGE=A +) noDE=M176R10;LINKAGE=A NODE=M176R11 NODE=M176R11 NODE=M176R11;LINKAGE=A NODE=M176405
$F \rightarrow K^{+}\chi_{c1}(3872)) \times B(\chi_{c1} \rightarrow \gamma\psi(2S)) < 3.45 \times 10$ $(3872) \rightarrow \gamma\psi(2S))/\Gamma_{total}] \times [B(B^{+} \rightarrow \chi_{c1}(3872)K)]$ hich we divide by our best value $B(B^{+} \rightarrow \chi_{c1}(3872)K)$ first error is their experiment's error and our second error is our best value. S)) $\Gamma_{27}/[\frac{DOCUMENT ID}{ABLIKIM} 20W BES3 e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)]$ $\Gamma_{27}/[f] \frac{DOCUMENT ID}{DOCUMENT ID} \frac{TECN}{20W BES3} \frac{COMMENT}{e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)}$ g data for averages, fits, limits, etc. ••• ABLIKIM 20W BES3 $e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)$ g data for averages, fits, limits, etc. ••• ABLIKIM 20W BES3 $e^{+}e^{-} \rightarrow \gamma\chi_{c1}(388)$ $1 \text{ AAIJ} 14\text{AH LHCB } B^{+} \rightarrow \gamma\psi(2S)K^{+}$ BHARDWAJ 11 BELL $B^{+} \rightarrow \gamma\psi(2S)K^{+}$ AUBERT 09B BABR $B^{+} \rightarrow \gamma c \overline{c}K'$ $c_{1}(3872) \rightarrow J/\psi\gamma$ decays with a statistical significance. Ceviolating decays Γ_{28}	 -6 NODE=M176R10;LINKAGE=B +)] NODE=M176R10;LINKAGE=A +) NODE=M176R10;LINKAGE=A r is NODE=M176R19 24 NODE=M176R11 24 NODE=M176R11 72) Ⅰ e of NODE=M176R11;LINKAGE=A NODE=M176R11;LINKAGE=A NODE=M176R2
$F \rightarrow K^{+}\chi_{c1}(3872)) \times B(\chi_{c1} \rightarrow \gamma\psi(2S)) < 3.45 \times 10$ $(3872) \rightarrow \gamma\psi(2S))/\Gamma_{total}] \times [B(B^{+} \rightarrow \chi_{c1}(3872)K)]$ hich we divide by our best value $B(B^{+} \rightarrow \chi_{c1}(3872)K)$ irst error is their experiment's error and our second error is gour best value. S() Γ_{27}/I $\frac{DOCUMENT ID}{ABLIKIM} 20W BES3 e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)$ Γ_{27}/I $\frac{DOCUMENT ID}{I} TECN} COMMENT$ g data for averages, fits, limits, etc. • • • ABLIKIM 20W BES3 $e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)K^{+}$ $BHARDWAJ 11 BELL B^{+} \rightarrow \gamma\psi(2S)K^{+}$ $AUBERT 09B BABR B^{+} \rightarrow \gamma c c K'$ $\cdot_{1}(3872) \rightarrow J/\psi\gamma \text{ decays with a statistical significance}$ Γ_{28} $\frac{DOCUMENT ID}{I} TECN} COMMENT$	-6 NODE=M176R10;LINKAGE=B +)] NODE=M176R10;LINKAGE=A +) noDE=M176R10;LINKAGE=A ris NODE=M176R19 72) NODE=M176R11 24 NODE=M176R11 NODE=M176R11 NODE=M176R11 72) NODE=M176R11;LINKAGE=A NODE=M176R11;LINKAGE=A NODE=M176R2 Pof NODE=M176R2
$F \rightarrow K^{+}\chi_{c1}(3872)) \times B(\chi_{c1} \rightarrow \gamma\psi(2S)) < 3.45 \times 10$ $(3872) \rightarrow \gamma\psi(2S))/\Gamma_{total}] \times [B(B^{+} \rightarrow \chi_{c1}(3872)K)]$ hich we divide by our best value $B(B^{+} \rightarrow \chi_{c1}(3872)K)$ irst error is their experiment's error and our second error ag our best value. S)) $\Gamma_{27}/[N]$ $\frac{DOCUMENT ID}{ABLIKIM} 20W BES3 e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)$ $F_{27}/[N]$ $\frac{DOCUMENT ID}{I} TECN COMMENT}$ g data for averages, fits, limits, etc. • • • ABLIKIM 20W BES3 $e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)$ $\Gamma_{27}/[N]$ $\frac{DOCUMENT ID}{I} TECN COMMENT}$ g data for averages, fits, limits, etc. • • • ABLIKIM 20W BES3 $e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)$ $I = AIJ AIJ AIAH LHCB B^{+} \rightarrow \gamma\psi(2S)K^{+}$ $BHARDWAJ 11 BELL B^{+} \rightarrow \gamma\psi(2S)K^{+}$ $AUBERT 09B BABR B^{+} \rightarrow \gamma c\bar{c}K'$ $r_{1}(3872) \rightarrow J/\psi\gamma \text{ decays with a statistical significance}$ $C-violating decays$ Γ_{28} $\frac{DOCUMENT ID}{I} TECN COMMENT}$ $CL = 90\%) OUR 2023 BEST LIMIT]$ $I,2 IWASHITA 14 BELL B \rightarrow K\eta J/\psi$ $I = AIA F AVE AF $	-6 NODE=M176R10;LINKAGE=B +) NODE=M176R10;LINKAGE=A +) noDE=M176R10;LINKAGE=A ris NODE=M176R19 72) NODE=M176R11 24 NODE=M176R11 NODE=M176R11 NODE=M176R11 72) NODE=M176R11 * of NODE=M176R11;LINKAGE=A NODE=M176R11;LINKAGE=A NODE=M176R2 * of NODE=M176R2
$F \rightarrow K^{+}\chi_{c1}(3872)) \times B(\chi_{c1} \rightarrow \gamma\psi(2S)) < 3.45 \times 10$ $(3872) \rightarrow \gamma\psi(2S))/\Gamma_{total}] \times [B(B^{+} \rightarrow \chi_{c1}(3872)K)]$ hich we divide by our best value $B(B^{+} \rightarrow \chi_{c1}(3872)K)$ irst error is their experiment's error and our second error is our best value. S)) $\Gamma_{27}/[\frac{DOCUMENT ID}{ABLIKIM} 20W BES3 e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)]$ $\Gamma_{27}/[\frac{DOCUMENT ID}{ABLIKIM} 20W BES3 e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)]$ $\Gamma_{27}/[\frac{DOCUMENT ID}{ABLIKIM} 20W BES3 e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)]$ $\Gamma_{27}/[\frac{DOCUMENT ID}{AAIJ} 14AH LHCB B^{+} \rightarrow \gamma\psi(2S)K^{+} BHARDWAJ 11 BELL B^{+} \rightarrow \gamma\psi(2S)K^{+} AUBERT 09B BABR B^{+} \rightarrow \gamma c \overline{c}K'$ $r_{1}(3872) \rightarrow J/\psi\gamma \text{ decays with a statistical significance}$ Γ_{28} $\frac{DOCUMENT ID}{DOCUMENT ID} \frac{TECN}{COMMENT} COMMENT}$ $\Gamma_{290\%}(OUR 2023 BEST LIMIT]$ $r_{2}(WASHITA 14 BELL B \rightarrow K\eta J/\psi g data for averages, fits, limits, etc. \bullet \bullet$ $\frac{3}{ALIBEPT} 04Y BABP B \rightarrow K\eta J/\psi$	-6 NODE=M176R10;LINKAGE=B +)] NODE=M176R10;LINKAGE=A +) nODE=M176R10;LINKAGE=A r is NODE=M176R19 ?2) NODE=M176R11
$F \rightarrow K^{+}\chi_{c1}(3872)) \times B(\chi_{c1} \rightarrow \gamma\psi(2S)) < 3.45 \times 10$ $(3872) \rightarrow \gamma\psi(2S))/\Gamma_{total}] \times [B(B^{+} \rightarrow \chi_{c1}(3872)K)]$ hich we divide by our best value $B(B^{+} \rightarrow \chi_{c1}(3872)K)$ irst error is their experiment's error and our second error is our best value. S() Γ_{27}/I $\frac{DOCUMENT ID}{ABLIKIM} 20W BES3 e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)$ Γ_{27}/I $\frac{DOCUMENT ID}{I} \frac{TECN}{I} COMMENT}$ g data for averages, fits, limits, etc. • • • ABLIKIM 20W BES3 $e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)$ Γ_{27}/I $\frac{DOCUMENT ID}{I} \frac{TECN}{I} COMMENT}$ g data for averages, fits, limits, etc. • • • ABLIKIM 20W BES3 $e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387)$ Γ_{27}/I $I AAIJ 14AH LHCB B^{+} \rightarrow \gamma\psi(2S)K^{+} AUBERT 09B BABR B^{+} \rightarrow \gamma c \overline{c}K' \Gamma_{1}(3872) \rightarrow J/\psi\gamma \text{ decays with a statistical significance} C-violating decays \Gamma_{28} \frac{DOCUMENT ID}{I} \frac{TECN}{I} COMMENT} I WASHITA 14 BELL B \rightarrow K\eta J/\psi I (3872) \rightarrow m I/\psi/I = 1 \times [B(B^{+} \rightarrow \gamma m)/\psi] I (3872) \rightarrow m I/\psi/I = 1 \times [B(B^{+} \rightarrow \gamma m)/\psi] I (3872) \rightarrow m I/\psi/I = 1 \times [B(B^{+} \rightarrow \gamma m)/\psi]$	$ \begin{array}{c} -6 \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{B} \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{A} \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{A} \\ \text{NODE}=\text{M176R19} \\ \text{NODE}=\text{M176R19} \\ \end{array} $
$ \begin{array}{l} \rightarrow K^{+}\chi_{c1}(3872)) \times B(\chi_{c1} \rightarrow \gamma\psi(2S)) < 3.45 \times 10 \\ (3872) \rightarrow \gamma\psi(2S))/\Gamma_{\text{total}}] \times [B(B^{+} \rightarrow \chi_{c1}(3872)K)] \\ \text{hich we divide by our best value B(B^{+} \rightarrow \chi_{c1}(3872)K) \\ irst error is their experiment's error and our second error is our best value. \\ $	$ \begin{array}{c} -6 \\ \text{NODE}=\text{M176R10;LINKAGE}=\text{B} \\ \text{NODE}=\text{M176R10;LINKAGE}=\text{A} \\ +) \\ \text{r is} \\ \hline \textbf{r}_{3} \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{A} \\ \hline \textbf{r}_{2} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11} \\ \text{NODE}=\text{M176R11; LINKAGE}=\text{A} \\ \hline \textbf{NODE}=\text{M176R11; LINKAGE}=\text{A} \\ \hline \textbf{NODE}=\text{M176R2; LINKAGE}=\text{A} \\ \hline \textbf{r}_{4} \\ \text{NODE}=\text{M176R2; LINKAGE}=\text{A} \\ \hline \textbf{r}_{4} \\ \end{array} $
$ \begin{array}{c} \rightarrow K^{+}\chi_{c1}(3872)) \times B(\chi_{c1} \rightarrow \gamma\psi(2S)) < 3.45 \times 10 \\ (3872) \rightarrow \gamma\psi(2S))/\Gamma_{\text{total}}] \times [B(B^{+} \rightarrow \chi_{c1}(3872)K)] \\ \text{hich we divide by our best value } B(B^{+} \rightarrow \chi_{c1}(3872)K) \\ \text{hich we divide by our best value } B(B^{+} \rightarrow \chi_{c1}(3872)K) \\ \text{irst error is their experiment's error and our second error and our second error and our best value. \\ \textbf{S))} \\ \hline \Gamma_{27}/\Gamma \\ \hline \underline{DOCUMENT \ ID} \\ ABLIKIM 20w BES3 \\ e^{+}e^{-} \rightarrow \gamma\chi_{c1}(387) \\ \hline \Gamma_{27}/\Gamma \\ \underline{DOCUMENT \ ID} \\ \text{g data for averages, fits, limits, etc. } \bullet \bullet \\ ABLIKIM 20w BES3 \\ e^{+}e^{-} \rightarrow \gamma\chi_{c1}(388) \\ 1 \text{ AHJ 20W BES3 } e^{+}e^{-} \rightarrow \gamma\chi_{c1}(388) \\ 1 \text{ AHJ 20W BES3 } e^{+}e^{-} \rightarrow \gamma\psi(2S)K^{+} \\ \text{ BHARDWAJ 11 BELL } B^{+} \rightarrow \gamma\psi(2S)K^{+} \\ \text{AUBERT 09B BABR } B^{+} \rightarrow \gamma c\overline{c}K' \\ \cdot_{1}(3872) \rightarrow J/\psi\gamma \text{ decays with a statistical significance} \\ \hline C-violating decays \\ \hline \Gamma_{28} \\ \hline DOCUMENT \ ID \\ 1,2 \ IWASHITA 14 BELL \\ B \rightarrow K\eta J/\psi \\ \text{g data for averages, fits, limits, etc. } \bullet \bullet \\ ^{3} \text{AUBERT 04Y BABR } B \rightarrow K\eta J/\psi \\ (3872) \rightarrow \eta J/\psi)/\Gamma_{\text{total}} \times [B(B^{+} \rightarrow \chi_{c1}(3872)K^{+}) = 2.3 \times 10^{-7} \\ \eta J/\psi \end{array}$	$ \begin{array}{c} -6 \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{B} \\ \text{NODE}=\text{M176R10; LINKAGE}=\text{A} \\ +) \\ \text{r is} \\ \hline \textbf{r} \\ $
$ \begin{array}{l} \rightarrow K^{+}\chi_{c1}(3872))\times \mathrm{B}(\chi_{c1}\rightarrow\gamma\psi(2S)) < 3.45\times10\\ (3872)\rightarrow\gamma\psi(2S))/\Gamma_{\mathrm{total}}]\times [\mathrm{B}(B^{+}\rightarrow\chi_{c1}(3872)K)\\ \text{hich we divide by our best value }\mathrm{B}(B^{+}\rightarrow\chi_{c1}(3872)K)\\ \text{hich we divide by our best value }\mathrm{B}(B^{+}\rightarrow\chi_{c1}(3872)K)\\ \text{irst error is their experiment's error and our second error is our best value.}\\ \hline \textbf{S))} \qquad \qquad \begin{array}{c} \Gamma_{27}/\\ \hline DOCUMENT ID \\ \mathrm{ABLIKIM} & 20\mathrm{W} \ \mathrm{BES3} & e^{+}e^{-}\rightarrow\gamma\chi_{c1}(387)\\ \hline DOCUMENT ID \\ \mathrm{ABLIKIM} & 20\mathrm{W} \ \mathrm{BES3} & e^{+}e^{-}\rightarrow\gamma\chi_{c1}(387)\\ \hline DOCUMENT ID \\ \mathrm{f}ed ata for averages, fits, limits, etc. \bullet \bullet \bullet\\ & \mathrm{ABLIKIM} & 20\mathrm{W} \ \mathrm{BES3} & e^{+}e^{-}\rightarrow\gamma\chi_{c1}(388)\\ \mathrm{I} \ \mathrm{AIJ} & 14\mathrm{AH} \ \mathrm{LHCB} \ B^{+}\rightarrow\gamma\psi(2S)K^{+}\\ & \mathrm{BHARDWAJ} \ 11 \ \ \mathrm{BELL} \ B^{+}\rightarrow\gamma\psi(2S)K^{+}\\ & \mathrm{AUBERT} 09\mathrm{B} \ \ \mathrm{BABR} \ B^{+}\rightarrow\gamma c \overline{c}K'\\ \mathbf{c_1}(3872)\rightarrow J/\psi\gamma \ \ \mathrm{decays} \ \hline \mathbf{c_2}\\ \hline \mathbf{c_2}\\ \hline DOCUMENT \ \mathrm{ID} \\ \mathrm{I} \ \mathrm{C} \ \mathrm{COMMENT}\\ \hline \mathbf{c_3} \ \mathrm{AUBERT} \ 04\mathrm{Y} \ \ \mathrm{BABR} \ B\rightarrow K\eta J/\psi\\ \mathrm{g} \ \mathrm{data} \ \ \mathrm{for averages, fits, limits, etc.} \bullet \bullet \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	 NODE=M176R10;LINKAGE=B NODE=M176R10;LINKAGE=A NODE=M176R10;LINKAGE=A NODE=M176R11 NODE=M176R11 NODE=M176R11;LINKAGE=A NODE=M176R2 NODE=M176R2;LINKAGE=A NODE=M176R2;LINKAGE=C
	Γ_{25} $\frac{DOCUMENT ID}{10^{-3} (CL = 90\%) OUR 2023 BEST LIMIT]}$ $^{1} BHARDWAJ 13 BELL B^{\pm} \rightarrow \chi_{c1}\gamma K^{\pm}$ $^{1}(3872) \rightarrow \gamma \chi_{c1})/\Gamma_{total}] \times [B(B^{+} \rightarrow \chi_{c1}(3872) K^{-}]$ by our best value $B(B^{+} \rightarrow \chi_{c1}(3872) K^{+}) = 2.3 \times 10^{-5}$ $\frac{DOCUMENT ID}{CHOI 03} \frac{TECN}{BELL} \frac{COMMENT}{B \rightarrow K \pi^{+} \pi^{-} J/\psi}$ Γ_{26} $\frac{DOCUMENT ID}{CL = 90\%} OUR 2023 BEST LIMIT]$ $^{1} BHARDWAJ 13 BELL B^{\pm} \rightarrow \chi_{c2}\gamma K^{\pm}$ $^{1}(3872) \rightarrow \gamma \chi_{c2})/\Gamma_{total}] \times [B(B^{+} \rightarrow \chi_{c1}(3872) K^{-}]$ by our best value $B(B^{+} \rightarrow \chi_{c1}(3872) K^{+}) = 2.3 \times 10^{-5}$ Γ_{27} $\frac{DOCUMENT ID}{DEST LIMIT]} \frac{TECN}{10} \frac{COMMENT}{2.3 \times 10^{-5}}$ $PBEST LIMIT]$ $^{1} AAIJ 14AH LHCB B^{+} \rightarrow \gamma \psi(25) K$ g data for averages, fits, limits, etc. • • • $^{2} BHARDWAJ 11 BELL B^{+} \rightarrow \gamma \psi(25) K$ $^{3} AUBERT 09B BABR B^{+} \rightarrow \gamma \psi(25) K$ $^{3} AUBERT 09B BABR B^{+} \rightarrow \gamma \psi(25) K$

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