

Reference = LEES 15J; PR D92 072008
Verifier code = RONEY

PLEASE READ NOW



Normally we send all verifications for one experiment to one person, usually the spokesperson or data-analysis coordinator, who then distributes them to the appropriate people. Please tell us if we should send the verifications for your experiment to someone else.

Mike Michael Roney
EMAIL: mroney@uvic.ca

July 21, 2016

Dear Colleague,

- (1) Please check the results of your experiment carefully. They are marked.
- (2) Please reply within one week.
- (3) Please reply even if everything is correct.
- (4) IMPORTANT!! Please tell WHICH papers you are verifying. We have lots of requests out.
- (5) Feel free to make comments on our treatment of any of the results (not just yours) you see.

Thank you for helping us make the Review accurate and useful.

Sincerely,

Simon Eidelman
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Prospekt Lavrent'eva 11
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Russian Federation

EMAIL: simon.eidelman@cern.ch

$c\bar{c}$ MESONS

 $J/\psi(1S)$

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

NODE=MXXX025

NODE=M070

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

NODE=M070225

NODE=M070225

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

 $\Gamma(K^+ K^-) \times \Gamma(e^+ e^-) / \Gamma_{\text{total}}$
 $\Gamma_{133} \Gamma_5 / \Gamma$

VALUE (eV)	EVTs	DOCUMENT ID	TECN	COMMENT
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 NODE=M070G08
 NODE=M070G08

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

YOUR DATA	1.78 ± 0.11 ± 0.05	462	¹ LEES	15J	BABR	$e^+ e^- \rightarrow K^+ K^- \gamma$
YOUR DATA	1.94 ± 0.11 ± 0.05	462	² LEES	15J	BABR	$e^+ e^- \rightarrow K^+ K^- \gamma$
	1.42 ± 0.23 ± 0.08	51	³ LEES	13Q	BABR	$e^+ e^- \rightarrow K^+ K^- \gamma$
YOUR NOTE	¹ $\sin \phi > 0$.					
YOUR NOTE	² $\sin \phi < 0$.					
	³ Interference with non-resonant $K^+ K^-$ production not taken into account.					

OCCUR=2

 NODE=M070G08;LINKAGE=A
 NODE=M070G08;LINKAGE=B
 NODE=M070G08;LINKAGE=BA

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

NODE=M070230

STABLE HADRONS

NODE=M070307

 $\Gamma(K^+ K^-) / \Gamma_{\text{total}}$
 Γ_{133} / Γ

VALUE (units 10^{-4})	EVTs	DOCUMENT ID	TECN	COMMENT
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 NODE=M070R13
 NODE=M070R13

2.86 ± 0.09 ± 0.19 1k ¹ METREVELI 12 $\psi(2S) \rightarrow \pi^+ \pi^- K^+ K^-$

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

YOUR DATA	3.22 ± 0.20 ± 0.12	462	^{2,3} LEES	15J	BABR	$e^+ e^- \rightarrow K^+ K^- \gamma$
YOUR DATA	3.50 ± 0.20 ± 0.12	462	^{3,4} LEES	15J	BABR	$e^+ e^- \rightarrow K^+ K^- \gamma$
	2.39 ± 0.24 ± 0.22	107	⁵ BALTRUSAIT...85D	MRK3		$e^+ e^-$
	2.2 ± 0.9	6	⁵ BRANDELIK	79C	DASP	$e^+ e^-$
YOUR NOTE	¹ Obtained by analyzing CLEO-c data but not authored by the CLEO Collaboration.					
	² $\sin \phi > 0$.					
YOUR NOTE	³ Using $\Gamma(J/\psi \rightarrow e^+ e^-) = (5.55 \pm 0.14) \text{ keV}$.					
YOUR NOTE	⁴ $\sin \phi < 0$.					
	⁵ Interference with non-resonant $K^+ K^-$ production not taken into account.					

OCCUR=2

 NODE=M070R13;LINKAGE=ME
 NODE=M070R13;LINKAGE=A
 NODE=M070R13;LINKAGE=B
 NODE=M070R13;LINKAGE=C
 NODE=M070R13;LINKAGE=BA

 $J/\psi(1S)$ REFERENCES

NODE=M070

YOUR PAPER	LEES	15J	PR D92 072008	J.P. Lees <i>et al.</i>	(BABAR Collab.)
	LEES	13Q	PR D88 032013	J.P. Lees <i>et al.</i>	(BABAR Collab.)
	METREVELI	12	PR D85 092007	Z. Metreveli <i>et al.</i>	(NWES, FLOR, WAYN+)
	BALTRUSAIT...85D		PR D32 566	R.M. Baltrusaitis <i>et al.</i>	(CIT, UCSC+)
	BRANDELIK	79C	ZPHY C1 233	R. Brandelik <i>et al.</i>	(DASP Collab.)

 REFID=56988
 REFID=55404
 REFID=54304
 REFID=22097
 REFID=22114
 NODE=M071

 $\psi(2S)$

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

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

NODE=M071

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

NODE=M071230

NODE=M071230

This combination of a partial width with the partial width into $e^+ e^-$ and with the total width is obtained from the integrated cross section into channel (i) in the $e^+ e^-$ annihilation. We list only data that have not been used to determine the partial width $\Gamma(i)$ or the branching ratio $\Gamma(i)/\text{total}$.

$$\Gamma(K^+K^-) \times \Gamma(e^+e^-)/\Gamma_{\text{total}} \quad \Gamma_{98}\Gamma_6/\Gamma$$

VALUE (eV)	EVTs	DOCUMENT ID	TECN	COMMENT
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• • • We do not use the following data for averages, fits, limits, etc. • • •

YOUR DATA	0.147±0.035±0.005	66	¹ LEES	15J	BABR	$e^+e^- \rightarrow K^+K^-\gamma$
YOUR DATA	0.197±0.035±0.005	66	² LEES	15J	BABR	$e^+e^- \rightarrow K^+K^-\gamma$
	0.35 ±0.14 ±0.03	11	³ LEES	13Q	BABR	$e^+e^- \rightarrow K^+K^-\gamma$

YOUR NOTE ¹ $\sin\phi > 0$.

YOUR NOTE ² $\sin\phi < 0$.

³ Interference with non-resonant K^+K^- production not taken into account.

NODE=M071G06
NODE=M071G06

OCCUR=2

NODE=M071G06;LINKAGE=A
NODE=M071G06;LINKAGE=B
NODE=M071G06;LINKAGE=BA

$\psi(2S)$ BRANCHING RATIOS

NODE=M071235

HADRONIC DECAYS

NODE=M071310

$$\Gamma(K^+K^-)/\Gamma_{\text{total}} \quad \Gamma_{98}/\Gamma$$

VALUE (units 10 ⁻⁵)	CL%	EVTs	DOCUMENT ID	TECN	COMMENT
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7.48±0.23±0.39 1.3k ¹ METREVELI 12 $\psi(2S) \rightarrow K^+K^-$

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

YOUR DATA	6.2 ±1.5 ±0.2	66	^{2,3} LEES	15J	BABR	$e^+e^- \rightarrow K^+K^-\gamma$
YOUR DATA	8.3 ±1.5 ±0.2	66	^{3,4} LEES	15J	BABR	$e^+e^- \rightarrow K^+K^-\gamma$
	6.3 ±0.6 ±0.3		⁵ DOBBS	06A	CLEO	e^+e^-
	10 ±7		⁵ BRANDELIK	79C	DASP	e^+e^-
	< 5	90	FELDMAN	77	MRK1	e^+e^-

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

YOUR NOTE ² $\sin\phi > 0$.

YOUR NOTE ³ Using $\Gamma(\psi(2S) \rightarrow e^+e^-) = (2.37 \pm 0.04) \text{ keV}$.

YOUR NOTE ⁴ $\sin\phi < 0$.

⁵ Interference with non-resonant K^+K^- production not taken into account.

NODE=M071R23;LINKAGE=ME
NODE=M071R23;LINKAGE=A
NODE=M071R23;LINKAGE=B
NODE=M071R23;LINKAGE=C
NODE=M071R23;LINKAGE=BA

OCCUR=2

$\psi(2S)$ REFERENCES

NODE=M071

YOUR PAPER	LEES	15J	PR D92 072008	J.P. Lees <i>et al.</i>	(BABAR Collab.)	REFID=56988
	LEES	13Q	PR D88 032013	J.P. Lees <i>et al.</i>	(BABAR Collab.)	REFID=55404
	METREVELI	12	PR D85 092007	Z. Metreveli <i>et al.</i>	(NWES, FLOR, WAYN+)	REFID=54304
	DOBBS	06A	PR D74 011105	S. Dobbs <i>et al.</i>	(CLEO Collab.)	REFID=51158
	BRANDELIK	79C	ZPHY C1 233	R. Brandelik <i>et al.</i>	(DASP Collab.)	REFID=22114
	FELDMAN	77	PRPL 33C 285	G.J. Feldman, M.L. Perl	(LBL, SLAC)	REFID=22062