NODE=M085

$X(1835)$

$I^G(J^{PC}) = ?^?(?^{-+})$

OMITTED FROM SUMMARY TABLE

NODE=M085

Needs confirmation. Seen by BAI 03F and ABLIKIM 05R in radiative decays of the J/ψ. Evidence for a threshold enhancement in the $p\overline{p}$ mass spectrum was also reported by ABE 02K, AUBERT,B 05L, and WANG 05A in $B^+ \to p\overline{p}K^+$, WANG 05A in $B^0 \to p\overline{p}K^0_S$, ABE 02W in $\overline{B}^0 \to p\overline{p}D^0$, and WEI 08 in $B^+ \to p\overline{p}\pi^+$ decays. Not seen by ATHAR 06 in $\Upsilon(1S) \to p\overline{p}\gamma$.

$X(1835)$ MASS

NODE=M085205

NODE=M085M

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
1833.7± 6.1± 2.7	264	ABLIKIM	05R	BES2	$J/\psi \to \gamma\pi^+\pi^-\eta'$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1812 $^{+19}_{-26}$ ±18	95	[1] ABLIKIM	06J	BES2	$J/\psi \to \gamma\omega\phi$
1831 ± 7		[2] ABLIKIM	05R	BES2	$J/\psi \to \gamma p\overline{p}$

OCCUR=2

[1] Favors $J^{PC} = 0^{++}$ quantum numbers assignment.

NODE=M085M;LINKAGE=AL

[2] From the fit including final state interaction effects in isospin 0 S-wave according to SIBIRTSEV 05A. Systematic errors not estimated.

NODE=M085M;LINKAGE=AB

$X(1835)$ WIDTH

NODE=M085210

NODE=M085W

VALUE (MeV)	*CL%*	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
67.7±20.3± 7.7		264	ABLIKIM	05R	BES2	$J/\psi \to \gamma\pi^+\pi^-\eta'$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
105 ±20 ±28		95	[3] ABLIKIM	06J	BES2	$J/\psi \to \gamma\omega\phi$
$<$ 153	90		[4] ABLIKIM	05R	BES2	$J/\psi \to \gamma p\overline{p}$

OCCUR=2

[3] Favors $J^{PC} = 0^{++}$ quantum numbers assignment.

NODE=M085W;LINKAGE=AL

[4] From the fit including final state interaction effects in isospin 0 S-wave according to SIBIRTSEV 05A. Systematic errors not estimated.

NODE=M085W;LINKAGE=AB

$X(1835)$ DECAY MODES

NODE=M085215;NODE=M085

	Mode	Fraction (Γ_i/Γ)	
Γ_1	$p\overline{p}$	seen	DESIG=1;OUR EVAL;→ NOT CHECKED ←
Γ_2	$\pi^+\pi^-\eta'$	seen	DESIG=2;OUR EVAL;→ NOT CHECKED ←
Γ_3	$\omega\phi$	seen	DESIG=3

$X(1835)$ BRANCHING RATIOS

NODE=M085220

$\Gamma(p\overline{p})/\Gamma(\pi^+\pi^-\eta')$ Γ_1/Γ_2

NODE=M085R01

NODE=M085R01

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.333	ABLIKIM	05R	BES2	$J/\psi \to \gamma\pi^+\pi^-\eta'$

$\Gamma(\omega\phi)/\Gamma_{total}$ Γ_3/Γ

NODE=M085R02

NODE=M085R02

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
seen	ABLIKIM	06J	BES2	$J/\psi \to \gamma\omega\phi$

$X(1835)$ REFERENCES

NODE=M085

WEI	08	PL B659 80	J.-T. Wei *et al.*	(BELLE Collab.)	REFID=52086
ABLIKIM	06J	PRL 96 162002	M. Ablikim *et al.*	(BES Collab.)	REFID=51127
ATHAR	06	PR D73 032001	S.B. Athar *et al.*	(CLEO Collab.)	REFID=50993
ABLIKIM	05R	PRL 95 262001	M. Ablikim *et al.*	(BES Collab.)	REFID=50985
AUBERT,B	05L	PR D72 051101R	B. Aubert *et al.*	(BABAR Collab.)	REFID=50827
SIBIRTSEV	05A	PR D71 054010	A. Sibirtsev, J. Haidenbauer		REFID=51038
WANG	05A	PL B617 141	M.-Z. Wang *et al.*	(BELLE Collab.)	REFID=50651
BAI	03F	PRL 91 022001	J.Z. Bai *et al.*	(BES Collab.)	REFID=49473
ABE	02K	PRL 88 181803	K. Abe *et al.*	(BELLE Collab.)	REFID=48690
ABE	02W	PRL 89 151802	K. Abe *et al.*	(BELLE Collab.)	REFID=48980

OTHER RELATED PAPERS

ABLIKIM	08	EPJ C53 15	M. Ablikim *et al.*	(BES Collab.)	REFID=52047
BICUDO	07	EPJ C52 363	P. Bicudo *et al.*		REFID=51946
CHEN	07F	JPG 34 2679	H. Chen, R.-G. Ping		REFID=52059
ENTEM	07	PR D75 014004	D.R. Entem, F. Fernandez		REFID=51622
HE	07	EPJ C49 731	H.-G. He *et al.*		REFID=51641
LAPORTA	07	IJMP A22 5401	V. Laporta		REFID=52068
WANG	07A	JPG 34 505	Z.-J. Wang, S.-L. Wan		REFID=51699
HAIDENBAU...	06	PR D74 017501	J. Haidenbauer *et al.*		REFID=51165
HAIDENBAU...	06A	PL B643 29	J. Haidenbauer *et al.*		REFID=51522
HUANG	06A	PRL 96 032003	G.S. Huang *et al.*	(CLEO Collab.)	REFID=50999
KOCHELEV	06	PL B633 283	N. Kochelev, D.-P. Min	(SEOUL, JINR)	REFID=51000
LI	06	PR D74 034019	B.A. Li		REFID=51173
LI	06A	PR D74 054017	B.A. Li		REFID=51175
ZHAO	06	PR D74 114025	Q. Zhao, B.S. Zhou		REFID=51569
KOCHELEV	05	PR D72 097502	N. Kochelev, D.-P. Min	(SEOUL, JINR)	REFID=50966
LOISEAU	05	PR C72 011001	B. Loiseau, S. Wycech	(CURCP, WINR)	REFID=50804
BUGG	04A	EPJ C36 161	D.V. Bugg		REFID=50158
BUGG	04B	PL B598 8	D.V. Bugg		REFID=50169
GAO	04	CTP 42 844	G.-S. Gao, S.-L. Zhu		REFID=50520
KERBIKOV	04	PR C69 055205	B. Kerbikov *et al.*		REFID=50178
ZOU	04	PR D69 034004	B.S. Zou, H.C. Chiang		REFID=49784
DATTA	03B	PL B567 273	A. Datta, P.J. O'Donnell		REFID=49471