NODE=M114

$\eta(1760)$

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

OMITTED FROM SUMMARY TABLE

NODE=M114

Seen by DM2 in the $\rho\rho$ system (BISELLO 89B). Structure in this region has been reported before in the same system (BALTRUSAITIS 86B) and in the $\omega\omega$ system (BALTRUSAITIS 85C, BISELLO 87).

$\eta(1760)$ MASS

NODE=M114M

NODE=M114M

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
1751±15 OUR AVERAGE					
$1768^{+24}_{-25}\pm10$	465	[1] ZHANG	12A	BELL	$e^+e^- \to e^+e^-\eta'\pi^+\pi^-$
$1744\pm10\pm15$	1045	[2] ABLIKIM	06H	BES	$J/\psi \to \gamma\omega\omega$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$1703^{+12}_{-11}\pm\ 2$		[3] ZHANG	12A	BELL	$e^+e^- \to e^+e^-\eta'\pi^+\pi^-$
1760 ± 11	320	[4] BISELLO	89B	DM2	$J/\psi \to 4\pi\gamma$

OCCUR=2

[1] From a single-resonance fit.
NODE=M114M;LINKAGE=ZA
[2] From a partial wave analysis including $\eta(1760)$, $f_0(1710)$, $f_2(1640)$, and $f_2(1910)$.
NODE=M114M;LINKAGE=MA
[3] From a two-resonance fit.
NODE=M114M;LINKAGE=ZH
[4] Estimated by us from various fits. Systematic uncertainties not estimated.
NODE=M114M;LINKAGE=A

$\eta(1760)$ WIDTH

NODE=M114W

NODE=M114W

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
240±30 OUR AVERAGE					
$224^{+62}_{-56}\pm25$	465	[5] ZHANG	12A	BELL	$e^+e^- \to e^+e^-\eta'\pi^+\pi^-$
$244^{+24}_{-21}\pm25$	1045	[6] ABLIKIM	06H	BES	$J/\psi \to \gamma\omega\omega$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$42^{+36}_{-22}\pm15$		[7] ZHANG	12A	BELL	$e^+e^- \to e^+e^-\eta'\pi^+\pi^-$
60 ± 16	320	[8] BISELLO	89B	DM2	$J/\psi \to 4\pi\gamma$

OCCUR=2

[5] From a single-resonance fit.
NODE=M114W;LINKAGE=ZA
[6] From a partial wave analysis including $\eta(1760)$, $f_0(1710)$, $f_2(1640)$, and $f_2(1910)$.
NODE=M114W;LINKAGE=MA
[7] From a two-resonance fit.
NODE=M114W;LINKAGE=ZH
[8] Estimated by us from various fits. Systematic uncertainties not estimated.
NODE=M114W;LINKAGE=B

$\eta(1760)$ DECAY MODES

NODE=M114215;NODE=M114

	Mode	Fraction (Γ_i/Γ)	
Γ_1	4π		DESIG=1
Γ_2	$2\pi^+2\pi^-$	seen	DESIG=2
Γ_3	$\pi^+\pi^-2\pi^0$	seen	DESIG=3
Γ_4	$\rho^0\rho^0$	seen	DESIG=4
Γ_5	$\rho^+\rho^-$	seen	DESIG=5
Γ_6	$\omega\omega$	seen	DESIG=7
Γ_7	$\eta'\pi^+\pi^-$	seen	DESIG=8;OUR EVAL;→ UNCHECKED ←
Γ_8	$\gamma\gamma$	seen	DESIG=9;OUR EVAL;→ UNCHECKED ←

$\eta(1760)$ $\Gamma(i)\Gamma(\gamma\gamma)/\Gamma(\text{total})$

NODE=M114225

$\Gamma(\eta'\pi^+\pi^-) \times \Gamma(\gamma\gamma)/\Gamma_{\text{total}}$ $\Gamma_7\Gamma_8/\Gamma$

NODE=M114G01
NODE=M114G01

VALUE (eV)	EVTS	DOCUMENT ID		TECN	COMMENT
$\mathbf{28.2^{+\ 7.9}_{-\ 7.5}\pm3.7}$	465	[9] ZHANG	12A	BELL	$e^+e^- \to e^+e^-\eta'\pi^+\pi^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$3.0^{+\ 2.0}_{-\ 1.2}\pm0.8$	52	[10] ZHANG	12A	BELL	$e^+e^- \to e^+e^-\eta'\pi^+\pi^-$
$18\ ^{+13}_{-10}\ \pm5$	315	[11] ZHANG	12A	BELL	$e^+e^- \to e^+e^-\eta'\pi^+\pi^-$

OCCUR=2

OCCUR=3

[9] From a single-resonance fit.
NODE=M114G01;LINKAGE=ZH
[10] From a two-resonance fit. For constructive interference with the $X(1835)$.
NODE=M114G01;LINKAGE=ZA
[11] From a two-resonance fit. For destructive interference with the $X(1835)$.
NODE=M114G01;LINKAGE=ZN

$\eta(1760)$ BRANCHING RATIOS

NODE=M114210

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

NODE=M114R01

VALUE	DOCUMENT ID		TECN	COMMENT
seen	BISELLO	89B	DM2	$J/\psi \to \gamma 2\pi^+ 2\pi^-$

$\Gamma(\pi^+\pi^-2\pi^0)/\Gamma_{total}$ — Γ_3/Γ

NODE=M114R02

VALUE	DOCUMENT ID		TECN	COMMENT
seen	BISELLO	89B	DM2	$J/\psi \to \gamma \pi^+ \pi^- 2\pi^0$

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

NODE=M114R03

VALUE	DOCUMENT ID		TECN	COMMENT
seen	BISELLO	89B	DM2	$J/\psi \to \gamma \rho^0 \rho^0$
seen	BALTRUSAIT...	86	MRK3	$J/\psi \to \gamma \rho^0 \rho^0$

$\Gamma(\rho^+\rho^-)/\Gamma_{total}$ — Γ_5/Γ

NODE=M114R04

VALUE	DOCUMENT ID		TECN	COMMENT
seen	BISELLO	89B	DM2	$J/\psi \to \gamma \rho^+ \rho^-$
seen	BALTRUSAIT...	86	MRK3	$J/\psi \to \gamma \rho^+ \rho^-$

$\Gamma(\omega\omega)/\Gamma_{total}$ — Γ_6/Γ

NODE=M114R06

VALUE	DOCUMENT ID		TECN	COMMENT
seen	BISELLO	87	DM2	$J/\psi \to \omega\omega$
seen	BALTRUSAIT...	85C	MRK3	$J/\psi \to \gamma\omega\omega$

$\Gamma(\gamma\gamma)/\Gamma(\omega\omega)$ — Γ_8/Γ_6

NODE=M114R08

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$<2.48 \times 10^{-3}$	90	[12] ABLIKIM	18O	BES3	$\psi(2S) \to \pi^+\pi^-\gamma\gamma$

[12] Using results from ABLIKIM 06H.

NODE=M114R08;LINKAGE=A

$\eta(1760)$ REFERENCES

NODE=M114

ABLIKIM	18O	PR D97 072014	M. Ablikim *et al.*	(BESIII Collab.)	REFID=58925
ZHANG	12A	PR D86 052002	C.C. Zhang *et al.*	(BELLE Collab.)	REFID=54763
ABLIKIM	06H	PR D73 112007	M. Ablikim *et al.*	(BES Collab.)	REFID=51125
BISELLO	89B	PR D39 701	G. Busetto *et al.*	(DM2 Collab.)	REFID=40575
BISELLO	87	PL B192 239	D. Bisello *et al.*	(PADO, CLER, FRAS+)	REFID=40012
BALTRUSAIT...	86	PR D33 629	R.M. Baltrusaitis *et al.*	(Mark III Collab.)	REFID=22009
BALTRUSAIT...	86B	PR D33 1222	R.M. Baltrusaitis *et al.*	(Mark III Collab.)	REFID=22100
BALTRUSAIT...	85C	PRL 55 1723	R.M. Baltrusaitis *et al.*	(CIT, UCSC+)	REFID=22095