

# $\eta_1(1855)$

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

## OMITTED FROM SUMMARY TABLE

Meson with exotic (non- $q\bar{q}$ ) quantum numbers. A state decaying into  $\eta\eta'$  with possible quantum numbers  $1^-+$  was reported earlier in this mass region BARBERIS 00A in high energy central  $pp$  production and by ALDE 91B in  $\pi^-p$  interactions, see the  $f_2(1910)$ , and the review on "Spectroscopy of Light Meson Resonances."

### $\eta_1(1855)$ MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
$1855 \pm 9^{+6}_{-1}$	<sup>1</sup> ABLIKIM	22AI	BES3 $J/\psi(1S) \rightarrow \gamma\eta\eta'$

<sup>1</sup> From a Breit-Wigner fit involving 9 resonances and the resonating exotic  $\eta_1(1855) \rightarrow \eta\eta'$   $P$ -wave. For analysis details see ABLIKIM 22AS.

### $\eta_1(1855)$ WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
$188 \pm 18^{+3}_{-8}$	<sup>1</sup> ABLIKIM	22AI	BES3 $J/\psi(1S) \rightarrow \gamma\eta\eta'$

<sup>1</sup> From a Breit-Wigner fit involving 9 resonances and the resonating exotic  $\eta_1(1855) \rightarrow \eta\eta'$   $P$ -wave. For analysis details see ABLIKIM 22AS.

### $\eta_1(1855)$ DECAY MODES

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1 \quad \eta\eta'$	seen

$\Gamma(\eta\eta')/\Gamma_{\text{total}}$	DOCUMENT ID	TECN	COMMENT	$\Gamma_1/\Gamma$
seen	ABLIKIM	22AI	BES3 $J/\psi \rightarrow \gamma\eta\eta'$	
seen	BARBERIS	00A	450 $pp \rightarrow p_f\eta\eta'p_s$	
seen	ALDE	91B	GAM2 38 $\pi^-p \rightarrow \eta\eta'n$	

### $\eta_1(1855)$ REFERENCES

ABLIKIM	22AI	PRL 129 192002	M. Ablikim <i>et al.</i>	(BESIII Collab.)
Also		PR D106 072012	M. Ablikim <i>et al.</i>	(BESIII Collab.)
ABLIKIM	22AS	PR D106 072012	M. Ablikim <i>et al.</i>	(BESIII Collab.)
Also		PR D107 079901 (errat.)	M. Ablikim <i>et al.</i>	(BESIII Collab.)
BARBERIS	00A	PL B471 429	D. Barberis <i>et al.</i>	(WA 102 Collab.)
ALDE	91B	SJNP 54 455	D.M. Alde <i>et al.</i>	(SERP, BELG, LANL, LAPP+)
		Translated from YAF 54 751.		