

$\eta_1(1855)$

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

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 π^-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
$1855 \pm 9^{+6}_{-1}$	¹ ABLIKIM	22AI BES3	$J/\psi(1S) \rightarrow \gamma\eta\eta'$

¹ 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
$188 \pm 18^{+3}_{-8}$	¹ ABLIKIM	22AI BES3	$J/\psi(1S) \rightarrow \gamma\eta\eta'$

¹ 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 (Γ_i/Γ)
$\Gamma_1 \quad \eta\eta'$	seen
$\Gamma_2 \quad \eta\eta'$	

$\eta_1(1855)$ BRANCHING RATIOS

$\Gamma(\eta\eta')/\Gamma_{\text{total}}$	DOCUMENT ID	TECN	COMMENT	Γ_1/Γ
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	$38 \pi^- p \rightarrow \eta\eta' n$	
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
not seen	¹ ABLIKIM	25CJ BES3	$\psi(2S) \rightarrow \gamma\chi_{c1} \rightarrow \eta\eta\eta'$	
¹ ABLIKIM 25CJ reports $B(\chi_{c1} \rightarrow \eta_1(1855)\eta) \times B(\eta_1(1855) \rightarrow \eta\eta') < 9.79 \times 10^{-5}$ at 90% CL.				

$\eta_1(1855)$ REFERENCES

ABLIKIM	25CJ	CP C49 123001	M. Ablikim <i>et al.</i>	(BESIII Collab.)
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.		
