

$\eta_2(1870)$

$$I^G(J^{PC}) = 0^+(2^-+)$$

$\eta_2(1870)$ MASS

VALUE (MeV)	EPTS	DOCUMENT ID	TECN	COMMENT
1842± 8 OUR AVERAGE				
1835±12		BARBERIS	00B	450 $pp \rightarrow p_f \eta \pi^+ \pi^- p_s$
1844±13		BARBERIS	00C	450 $pp \rightarrow p_f 4\pi p_s$
1840±25		BARBERIS	97B OMEG	450 $pp \rightarrow p p 2(\pi^+ \pi^-)$
1875±20±35		ADOMEIT	96 CBAR	1.94 $\bar{p}p \rightarrow \eta 3\pi^0$
1881±32±40	26	KARCH	92 CBAL	$e^+ e^- \rightarrow e^+ e^- \eta \pi^0 \pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1860± 5±15		ANISOVICH	00E SPEC	0.9–1.94 $\bar{p}p \rightarrow \eta 3\pi^0$
1840±15		BAI	99 BES	$J/\psi \rightarrow \gamma \eta \pi^+ \pi^-$

$\eta_2(1870)$ WIDTH

VALUE (MeV)	EPTS	DOCUMENT ID	TECN	COMMENT
225±14 OUR AVERAGE				
235±22		BARBERIS	00B	450 $pp \rightarrow p_f \eta \pi^+ \pi^- p_s$
228±23		BARBERIS	00C	450 $pp \rightarrow p_f 4\pi p_s$
200±40		BARBERIS	97B OMEG	450 $pp \rightarrow p p 2(\pi^+ \pi^-)$
200±25±45		ADOMEIT	96 CBAR	1.94 $\bar{p}p \rightarrow \eta 3\pi^0$
221±92±44	26	KARCH	92 CBAL	$e^+ e^- \rightarrow e^+ e^- \eta \pi^0 \pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
250±25 ⁺⁵⁰ _{−35}		ANISOVICH	00E SPEC	0.9–1.94 $\bar{p}p \rightarrow \eta 3\pi^0$
170±40		BAI	99 BES	$J/\psi \rightarrow \gamma \eta \pi^+ \pi^-$

$\eta_2(1870)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \quad \eta \pi \pi$	seen
$\Gamma_2 \quad a_2(1320) \pi$	seen
$\Gamma_3 \quad f_2(1270) \eta$	seen
$\Gamma_4 \quad a_0(980) \pi$	seen
$\Gamma_5 \quad \gamma \gamma$	seen

$\eta_2(1870)$ BRANCHING RATIOS

$\Gamma(a_2(1320)\pi)/\Gamma(f_2(1270)\eta)$					Γ_2/Γ_3
VALUE	DOCUMENT ID	TECN	COMMENT		
1.7 ±0.4 OUR AVERAGE					
1.60±0.40	¹ ANISOVICH	11	SPEC	0.9–1.94	$p\bar{p}$
20.4 ±6.6	BARBERIS	00B		450	$pp \rightarrow p_f \eta \pi^+ \pi^- p_s$
4.1 ±2.3	ADOMEIT	96	CBAR	1.94	$\bar{p}p \rightarrow \eta 3\pi^0$
¹ Reanalysis of ADOMEIT 96 and ANISOVICH 00E.					

$\Gamma(a_2(1320)\pi)/\Gamma(a_0(980)\pi)$	Γ_2/Γ_4		
VALUE	DOCUMENT ID	COMMENT	
32.6 ± 12.6	BARBERIS 00B	450 $pp \rightarrow p_f \eta \pi^+ \pi^- p_s$	

$\Gamma(a_0(980)\pi)/\Gamma(f_2(1270)\eta)$	Γ_4/Γ_3			
VALUE	DOCUMENT ID	TECN	COMMENT	
0.48 ± 0.45	¹ ANISOVICH 11	SPEC	0.9–1.94 $p\bar{p}$	

¹ Reanalysis of ADOMEIT 96 and ANISOVICH 00E.

$\Gamma(\gamma\gamma)/\Gamma_{\text{total}}$	Γ_5/Γ			
VALUE	DOCUMENT ID	TECN	COMMENT	
seen	KARCH 92	CBAL	$e^+e^- \rightarrow e^+e^-\eta\pi^0\pi^0$	

$\eta_2(1870)$ REFERENCES

ANISOVICH 11	EPJ C71 1511	A.V. Anisovich <i>et al.</i>	(LOQM, RAL, PNPI)
ANISOVICH 00E	PL B477 19	A.V. Anisovich <i>et al.</i>	
BARBERIS 00B	PL B471 435	D. Barberis <i>et al.</i>	(WA 102 Collab.)
BARBERIS 00C	PL B471 440	D. Barberis <i>et al.</i>	(WA 102 Collab.)
BAI 99	PL B446 356	J.Z. Bai <i>et al.</i>	(BES Collab.)
BARBERIS 97B	PL B413 217	D. Barberis <i>et al.</i>	(WA 102 Collab.)
ADOMEIT 96	ZPHY C71 227	J. Adomeit <i>et al.</i>	(Crystal Barrel Collab.)
KARCH 92	ZPHY C54 33	K. Karch <i>et al.</i>	(Crystal Ball Collab.)