

# $\eta_2(1645)$

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

## $\eta_2(1645)$ MASS

VALUE (MeV)	DOCUMENT ID	TECN	CHG	COMMENT
<b>1617 ± 5 OUR AVERAGE</b>				
1613 ± 8	BARBERIS	00B		450 $pp \rightarrow p_f \eta \pi^+ \pi^- p_s$
1617 ± 8	BARBERIS	00C		450 $pp \rightarrow p_f 4\pi p_s$
1620 ± 20	BARBERIS	97B	OMEG	450 $pp \rightarrow pp2(\pi^+ \pi^-)$
1645 ± 14 ± 15	ADOMEIT	96	CBAR 0	1.94 $\bar{p}p \rightarrow \eta 3\pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1645 ± 6 ± 20	ANISOVICH	00E	SPEC	0.9–1.94 $\bar{p}p \rightarrow \eta 3\pi^0$

## $\eta_2(1645)$ WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	CHG	COMMENT
<b>181 ± 11 OUR AVERAGE</b>				
185 ± 17	BARBERIS	00B		450 $pp \rightarrow p_f \eta \pi^+ \pi^- p_s$
177 ± 18	BARBERIS	00C		450 $pp \rightarrow p_f 4\pi p_s$
180 ± 25	BARBERIS	97B	OMEG	450 $pp \rightarrow pp2(\pi^+ \pi^-)$
180 <sup>+40</sup> <sub>-21</sub> ± 25	ADOMEIT	96	CBAR 0	1.94 $\bar{p}p \rightarrow \eta 3\pi^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
200 ± 25	ANISOVICH	00E	SPEC	0.9–1.94 $\bar{p}p \rightarrow \eta 3\pi^0$

## $\eta_2(1645)$ DECAY MODES

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $a_2(1320)\pi$	seen
$\Gamma_2$ $K\bar{K}\pi$	seen
$\Gamma_3$ $K^*\bar{K}$	seen
$\Gamma_4$ $\eta\pi^+\pi^-$	seen
$\Gamma_5$ $a_0(980)\pi$	seen
$\Gamma_6$ $f_2(1270)\eta$	not seen

## $\eta_2(1645)$ BRANCHING RATIOS

$\Gamma(K\bar{K}\pi)/\Gamma(a_2(1320)\pi)$	$\Gamma_2/\Gamma_1$		
VALUE	DOCUMENT ID	TECN	COMMENT
<b>0.07 ± 0.03</b>	<sup>1</sup> BARBERIS	97C	OMEG 450 $pp \rightarrow ppK\bar{K}\pi$

<sup>1</sup> Using  $2(\pi^+\pi^-)$  data from BARBERIS 97B.

$\Gamma(a_2(1320)\pi)/\Gamma(a_0(980)\pi)$   $\Gamma_1/\Gamma_5$

VALUE DOCUMENT ID TECN COMMENT

**13.1 ± 2.3 OUR AVERAGE**

13.5 ± 4.6	<sup>2</sup> ANISOVICH	11	SPEC	0.9–1.94 $p\bar{p}$
13.0 ± 2.7	BARBERIS	00B		450 $pp \rightarrow p_f \eta \pi^+ \pi^- p_S$

<sup>2</sup> Reanalysis of ADOMEIT 96 and ANISOVICH 00E.

$\Gamma(f_2(1270)\eta)/\Gamma_{\text{total}}$   $\Gamma_6/\Gamma$

VALUE DOCUMENT ID COMMENT

• • • We do not use the following data for averages, fits, limits, etc. • • •

not seen	BARBERIS	00B	450 $pp \rightarrow p_f \eta \pi^+ \pi^- p_S$
----------	----------	-----	---

**$\eta_2(1645)$  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.)
BARBERIS	97B	PL B413 217	D. Barberis <i>et al.</i>	(WA 102 Collab.)
BARBERIS	97C	PL B413 225	D. Barberis <i>et al.</i>	(WA 102 Collab.)
ADOMEIT	96	ZPHY C71 227	J. Adomeit <i>et al.</i>	(Crystal Barrel Collab.)