

**$a_4(2040)$** 

$$I^G(J^{PC}) = 1^-(4^{++})$$

 **$a_4(2040)$  MASS**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>
<b>2014 ± 15 OUR AVERAGE</b>				
1944 ± 8 ± 50	<sup>1</sup> AMELIN	99	VES	37 $\pi^- A \rightarrow \omega \pi^- \pi^0 A^*$
2010 ± 20	<sup>2</sup> DONSKOV	96	GAM2 0	38 $\pi^- p \rightarrow \eta \pi^0 n$
2040 ± 30	<sup>3</sup> CLELAND	82B	SPEC ±	50 $\pi p \rightarrow K_S^0 K^\pm p$
2030 ± 50	<sup>4</sup> CORDEN	78C	OMEG 0	15 $\pi^- p \rightarrow 3\pi n$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1903 ± 10	<sup>5</sup> BALDI	78	SPEC -	10 $\pi^- p \rightarrow p K_S^0 K^-$

<sup>1</sup> May be a different state.<sup>2</sup> From a simultaneous fit to the  $G_+$  and  $G_0$  wave intensities.<sup>3</sup> From an amplitude analysis.<sup>4</sup>  $J^P = 4^+$  is favored, though  $J^P = 2^+$  cannot be excluded.<sup>5</sup> From a fit to the  $Y_8^0$  moment. Limited by phase space. **$a_4(2040)$  WIDTH**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>
<b>361 ± 50 OUR AVERAGE</b>				
324 ± 26 ± 75	<sup>6</sup> AMELIN	99	VES	37 $\pi^- A \rightarrow \omega \pi^- \pi^0 A^*$
370 ± 80	<sup>7</sup> DONSKOV	96	GAM2 0	38 $\pi^- p \rightarrow \eta \pi^0 n$
380 ± 150	<sup>8</sup> CLELAND	82B	SPEC ±	50 $\pi p \rightarrow K_S^0 K^\pm p$
510 ± 200	<sup>9</sup> CORDEN	78C	OMEG 0	15 $\pi^- p \rightarrow 3\pi n$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
166 ± 43	<sup>10</sup> BALDI	78	SPEC -	10 $\pi^- p \rightarrow p K_S^0 K^-$

<sup>6</sup> May be a different state.<sup>7</sup> From a simultaneous fit to the  $G_+$  and  $G_0$  wave intensities.<sup>8</sup> From an amplitude analysis.<sup>9</sup>  $J^P = 4^+$  is favored, though  $J^P = 2^+$  cannot be excluded.<sup>10</sup> From a fit to the  $Y_8^0$  moment. Limited by phase space. **$a_4(2040)$  DECAY MODES**

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $K\bar{K}$	seen
$\Gamma_2$ $\pi^+\pi^-\pi^0$	seen
$\Gamma_3$ $\eta\pi^0$	seen

## $a_4(2040)$ BRANCHING RATIOS

$\Gamma(K\bar{K})/\Gamma_{\text{total}}$					$\Gamma_1/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>	
seen	BALDI	78	SPEC	$\pm$	$10 \pi^- p \rightarrow K_S^0 K^- p$

  

$\Gamma(\pi^+ \pi^- \pi^0)/\Gamma_{\text{total}}$					$\Gamma_2/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>	
seen	CORDEN	78C	OMEG	0	$15 \pi^- p \rightarrow 3\pi n$

  

$\Gamma(\eta\pi^0)/\Gamma_{\text{total}}$					$\Gamma_3/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>	
seen	DONSKOV	96	GAM2	0	$38 \pi^- p \rightarrow \eta\pi^0 n$

## $a_4(2040)$ REFERENCES

AMELIN	99	PAN 62 445	D.V. Amelin <i>et al.</i>	(VES Collab.)
		Translated from YAF 62 487.		
DONSKOV	96	PAN 59 982	S.V. Donskov <i>et al.</i>	(GAMS Collab.) IGJPC
		Translated from YAF 59 1027.		
CLELAND	82B	NP B208 228	W.E. Cleland <i>et al.</i>	(DURH, GEVA, LAUS+)
BALDI	78	PL 74B 413	R. Baldi <i>et al.</i>	(GEVA) JP
CORDEN	78C	NP B136 77	M.J. Corden <i>et al.</i>	(BIRM, RHEL, TELA+) JP

## OTHER RELATED PAPERS

DELFOSSÉ	81	NP B183 349	A. Delfosse <i>et al.</i>	(GEVA, LAUS)
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