$a_4(2040)$

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

$a_4(2040)$ MASS

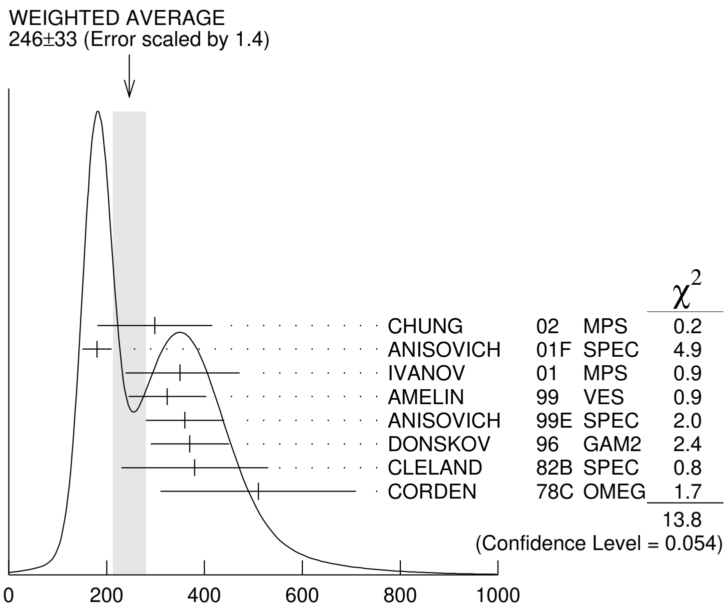
VALUE (MeV)	*DOCUMENT ID*		*TECN*	*CHG*	*COMMENT*
2009±11 OUR NEW AVERAGE	[2011 ± 13 MeV OUR 2002 AVERAGE]				
1996±25±43	CHUNG	02	MPS		18.3 $\pi^- p \to 3\pi p$
2005^{+25}_{-45}	ANISOVICH	01F	SPEC		2.0 $\overline{p}p \to 3\pi^0, \pi^0\eta, \pi^0\eta'$
$2000\pm40^{+60}_{-20}$	IVANOV	01	MPS		18 $\pi^- p \to \eta'\pi^- p$
1944± 8±50	[1] AMELIN	99	VES		37 $\pi^- A \to \omega\pi^-\pi^0 A^*$
2005±25	ANISOVICH	99E	SPEC		
2010±20	[2] DONSKOV	96	GAM2	0	38 $\pi^- p \to \eta\pi^0 n$
2040±30	[3] CLELAND	82B	SPEC	±	50 $\pi p \to K^0_S K^\pm p$
2030±50	[4] CORDEN	78C	OMEG	0	15 $\pi^- p \to 3\pi n$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1903±10	[5] BALDI	78	SPEC	−	10 $\pi^- p \to p K^0_S K^-$

[1] May be a different state.
[2] From a simultaneous fit to the G_+ and G_0 wave intensities.
[3] From an amplitude analysis.
[4] $J^P = 4^+$ is favored, though $J^P = 2^+$ cannot be excluded.
[5] From a fit to the Y^0_8 moment. Limited by phase space.

$a_4(2040)$ WIDTH

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*CHG*	*COMMENT*
246± 33 OUR NEW AVERAGE	Error includes scale factor of 1.4. See the ideogram below. [360 ± 40 MeV OUR 2002 AVERAGE]				
298± 81±85	CHUNG	02	MPS		18.3 $\pi^- p \to 3\pi p$
180± 30	ANISOVICH	01F	SPEC		2.0 $\overline{p}p \to 3\pi^0, \pi^0\eta, \pi^0\eta'$
$350\pm100^{+70}_{-50}$	IVANOV	01	MPS		18 $\pi^- p \to \eta'\pi^- p$
324± 26±75	[6] AMELIN	99	VES		37 $\pi^- A \to \omega\pi^-\pi^0 A^*$
360± 80	ANISOVICH	99E	SPEC		
370± 80	[7] DONSKOV	96	GAM2	0	38 $\pi^- p \to \eta\pi^0 n$
380±150	[8] CLELAND	82B	SPEC	±	50 $\pi p \to K^0_S K^\pm p$
510±200	[9] CORDEN	78C	OMEG	0	15 $\pi^- p \to 3\pi n$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
166± 43	[10] BALDI	78	SPEC	−	10 $\pi^- p \to p K^0_S K^-$

[6] May be a different state.
[7] From a simultaneous fit to the G_+ and G_0 wave intensities.
[8] From an amplitude analysis.
[9] $J^P = 4^+$ is favored, though $J^P = 2^+$ cannot be excluded.
[10] From a fit to the Y_8^0 moment. Limited by phase space.



$a_4(2040)$ MASS

$a_4(2040)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$K\overline{K}$	seen
Γ_2	$\pi^+\pi^-\pi^0$	seen
Γ_3	$\rho\pi$	seen
Γ_4	$f_2(1270)\pi$	seen
Γ_5	$\eta\pi^0$	seen
Γ_6	$\eta'(958)\pi$	seen

$a_4(2040)$ BRANCHING RATIOS

$\Gamma(K\overline{K})/\Gamma_{total}$ **Γ_1/Γ**

VALUE	*DOCUMENT ID*		*TECN*	*CHG*	*COMMENT*
seen	BALDI	78	SPEC	±	10 $\pi^- p \to K_S^0 K^- p$

$\Gamma(\pi^+\pi^-\pi^0)/\Gamma_{\text{total}}$ Γ_2/Γ

VALUE	*DOCUMENT ID*		*TECN*	*CHG*	*COMMENT*
seen	CORDEN	78C	OMEG	0	15 $\pi^- p \rightarrow 3\pi n$

$\Gamma(\rho\pi)/\Gamma(f_2(1270)\pi)$ Γ_3/Γ_4

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
1.1 ±0.2 ±0.2	CHUNG	02	MPS	18.3 $\pi^- p \rightarrow 3\pi p$

$\Gamma(\eta\pi^0)/\Gamma_{\text{total}}$ Γ_5/Γ

VALUE	*DOCUMENT ID*		*TECN*	*CHG*	*COMMENT*
seen	DONSKOV	96	GAM2	0	38 $\pi^- p \rightarrow \eta\pi^0 n$

a_4(2040) REFERENCES

CHUNG	02	PR D65 072001	S.U. Chung *et al.*	
ANISOVICH	01F	PL B517 261	A.V. Anisovich *et al.*	
IVANOV	01	PRL 86 3977	E.I. Ivanov *et al.*	
AMELIN	99	PAN 62 445	D.V. Amelin *et al.*	(VES Collab.)
		Translated from YAF 62 487.		
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