

$f_4(2300)$

$$I^G(J^{PC}) = 0^+(4^{++})$$

OMITTED FROM SUMMARY TABLE

This entry was previously called $U_0(2350)$. Contains results mostly from formation experiments. For further production experiments see the $\bar{N}N(1100-3600)$ entry. See also $\rho(2150)$, $f_2(2150)$, $\rho_3(2250)$, $\rho_5(2350)$.

 $f_4(2300)$ MASS **$\bar{p}p \rightarrow \pi\pi$ or $\bar{K}K$**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
• • •	We do not use the following data for averages, fits, limits, etc. • • •		
~ 2314	HASAN	94 RVUE	$\bar{p}p \rightarrow \pi\pi$
~ 2300	¹ MARTIN	80B RVUE	
~ 2300	¹ MARTIN	80C RVUE	
~ 2340	² CARTER	78B CNTR	0.7-2.4 $\bar{p}p \rightarrow K^- K^+$
~ 2330	DULUDE	78B OSPK	1-2 $\bar{p}p \rightarrow \pi^0 \pi^0$
~ 2310	³ CARTER	77 CNTR	0.7-2.4 $\bar{p}p \rightarrow \pi\pi$

¹ $I(J^P) = 0(4^+)$ from simultaneous analysis of $p\bar{p} \rightarrow \pi^- \pi^+$ and $\pi^0 \pi^0$.

² $I(J^P) = 0(4^+)$ from Barrelet-zero analysis.

³ $I(J^P) = 0(4^+)$ from amplitude analysis.

S-CHANNEL $\bar{p}p$ or $\bar{N}N$

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
• • •	We do not use the following data for averages, fits, limits, etc. • • •		
~ 2380	⁴ CUTTS	78B CNTR	0.97-3 $\bar{p}p \rightarrow \bar{N}N$
2345 ± 15	^{4,5} COUPLAND	77 CNTR	0.7-2.4 $\bar{p}p \rightarrow \bar{p}p$
2359 ± 2	^{4,6} ALSPECTOR	73 CNTR	$\bar{p}p$ S channel
2375 ± 10	ABRAMS	70 CNTR	S channel $\bar{N}N$

⁴ Isospins 0 and 1 not separated.

⁵ From a fit to the total elastic cross section.

⁶ Referred to as U or U region by ALSPECTOR 73.

 $\pi^- p \rightarrow \eta\pi\pi$

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
• • •	We do not use the following data for averages, fits, limits, etc. • • •		
2330 ± 20 ± 40	AMELIN	00 VES	37 $\pi^- p \rightarrow \eta\pi^+ \pi^- n$

$f_4(2300)$ WIDTH **$\bar{p}p \rightarrow \pi\pi$ or $\bar{K}K$**

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
~ 278	HASAN	94	RVUE $\bar{p}p \rightarrow \pi\pi$
~ 200	⁷ MARTIN	80C	RVUE
~ 150	⁸ CARTER	78B	CNTR 0.7-2.4 $\bar{p}p \rightarrow K^-K^+$
~ 210	⁹ CARTER	77	CNTR 0.7-2.4 $\bar{p}p \rightarrow \pi\pi$

⁷ $I(J^P) = 0(4^+)$ from simultaneous analysis of $p\bar{p} \rightarrow \pi^-\pi^+$ and $\pi^0\pi^0$.

⁸ $I(J^P) = 0(4^+)$ from Barrelet-zero analysis.

⁹ $I(J^P) = 0(4^+)$ from amplitude analysis.

S-CHANNEL $\bar{p}p$ or $\bar{N}N$

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
135^{+150}_{-65}	^{10,11} COUPLAND	77	CNTR 0.7-2.4 $\bar{p}p \rightarrow \bar{p}p$
165^{+18}_{-8}	¹¹ ALSPECTOR	73	CNTR $\bar{p}p$ S channel
~ 190	ABRAMS	70	CNTR S channel $\bar{N}N$

¹⁰From a fit to the total elastic cross section.

¹¹Isospins 0 and 1 not separated.

 $\pi^-p \rightarrow \eta\pi\pi$

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
$235 \pm 50 \pm 40$	AMELIN	00	VES 37 $\pi^-p \rightarrow \eta\pi^+\pi^-n$

 $f_4(2300)$ REFERENCES

AMELIN	00	NP B668 83	D. Amelin <i>et al.</i>	(VES Collab.)
HASAN	94	PL B334 215	A. Hasan, D.V. Bugg	(LOQM)
MARTIN	80B	NP B176 355	B.R. Martin, D. Morgan	(LOUC, RHEL) JP
MARTIN	80C	NP B169 216	A.D. Martin, M.R. Pennington	(DURH) JP
CARTER	78B	NP B141 467	A.A. Carter	(LOQM)
CUTTS	78B	PR D17 16	D. Cutts <i>et al.</i>	(STON, WISC)
DULUDE	78B	PL 79B 335	R.S. Dulude <i>et al.</i>	(BROW, MIT, BARI) JP
CARTER	77	PL 67B 117	A.A. Carter <i>et al.</i>	(LOQM, RHEL) JP
COUPLAND	77	PL 71B 460	M. Coupland <i>et al.</i>	(LOQM, RHEL)
ALSPECTOR	73	PRL 30 511	J. Alspector <i>et al.</i>	(RUTG, UPNJ)
ABRAMS	70	PR D1 1917	R.J. Abrams <i>et al.</i>	(BNL)

OTHER RELATED PAPERS

ANISOVICH	99D	PL B452 180	A.V. Anisovich <i>et al.</i>	
Also	99F	NP A651 253	A.V. Anisovich <i>et al.</i>	
ANISOVICH	99F	NP A651 253	A.V. Anisovich <i>et al.</i>	
EISENHAND...	75	NP B96 109	E. Eisenhandler <i>et al.</i>	(LOQM, LIVP, DARE+)
FIELDS	71	PRL 27 1749	T. Fields <i>et al.</i>	(ANL, OXF)
YOH	71	PRL 26 922	J.K. Yoh <i>et al.</i>	(CIT, BNL, ROCH)
BRICMAN	69	PL 29B 451	C. Bricman <i>et al.</i>	(CERN, CAEN, SACL)