

**$f_4(2300)$** 

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

## OMITTED FROM SUMMARY TABLE

This entry was previously called  $U_0(2350)$ . Contains results only from formation experiments. For 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  $\bar{K}K$** 

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

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

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

<sup>3</sup>  $I(J^P) = 0(4^+)$  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. ● ● ●			
~ 2380	<sup>4</sup> CUTTS	78B	CNTR 0.97-3 $\bar{p}p \rightarrow \bar{N}N$
2345 ± 15	<sup>4,5</sup> COUPLAND	77	CNTR 0.7-2.4 $\bar{p}p \rightarrow \bar{p}p$
2359 ± 2	<sup>4,6</sup> ALSPECTOR	73	CNTR $\bar{p}p$ S channel
2375 ± 10	ABRAMS	70	CNTR S channel $\bar{N}N$

<sup>4</sup> Isospins 0 and 1 not separated.

<sup>5</sup> From a fit to the total elastic cross section.

<sup>6</sup> Referred to as  $U$  or  $U$  region by ALSPECTOR 73.

 **$f_4(2300)$  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	<sup>7</sup> MARTIN	80C	RVUE
~ 150	<sup>8</sup> CARTER	78B	CNTR 0.7-2.4 $\bar{p}p \rightarrow K^- K^+$
~ 210	<sup>9</sup> CARTER	77	CNTR 0.7-2.4 $\bar{p}p \rightarrow \pi\pi$

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

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

<sup>9</sup>  $I(J^P) = 0(4^+)$  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 $\bar{N}N$
<sup>10</sup> From a fit to the total elastic cross section.			
<sup>11</sup> Isospins 0 and 1 not separated.			

### $f_4(2300)$ REFERENCES

HASAN	94	PL B334 215	+Bugg	(LOQM)
MARTIN	80B	NP B176 355	+Morgan	(LOUC, RHEL) JP
MARTIN	80C	NP B169 216	+Pennington	(DURH) JP
CARTER	78B	NP B141 467		(LOQM)
CUTTS	78B	PR D17 16	+Good, Grannis, Green, Lee+	(STON, WISC)
DULUDE	78B	PL 79B 335	+Lanou, Massimo, Peaslee+	(BROW, MIT, BARI) JP
CARTER	77	PL 67B 117	+Coupland, Eisenhandler, Astbury+	(LOQM, RHEL) JP
COUPLAND	77	PL 71B 460	+Eisenhandler, Gibson, Astbury+	(LOQM, RHEL)
ALSPECTOR	73	PRL 30 511	+Cohen, Cvijanovich+	(RUTG, UPNJ)
ABRAMS	70	PR D1 1917	+Cool, Giacomelli, Kycia, Leontic, Li+	(BNL)

### OTHER RELATED PAPERS

FIELDS	71	PRL 27 1749	+Cooper, Rhines, Allison	(ANL, OXF)
YOH	71	PRL 26 922	+Barish, Carroll, Lobkowicz+	(CIT, BNL, ROCH)
BRICMAN	69	PL 29B 451	+Ferro-Luzzi, Bizard+	(CERN, CAEN, SACL)