$\rho_3(2250)$

$I^G(J^{PC}) = 1^+(3^{--})$

OMITTED FROM SUMMARY TABLE

Contains results mostly from formation experiments. For further production experiments see the Further States entry. See also $\rho(2150)$, $f_2(2150)$, $f_4(2300)$, $\rho_5(2350)$.

$\rho_3(2250)$ MASS

$\overline{p}p \to \pi\pi$ or $K\overline{K}$

VALUE (MeV)	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
~ 2232	HASAN	94	RVUE		$\overline{p}p \to \pi\pi$
~ 2007	HASAN	94	RVUE		$\overline{p}p \to \pi\pi$
~ 2090	[1] OAKDEN	94	RVUE		0.36–1.55 $\overline{p}p \to \pi\pi$
~ 2250	[2] MARTIN	80B	RVUE		
~ 2300	[2] MARTIN	80C	RVUE		
~ 2140	[3] CARTER	78B	CNTR	0	0.7–2.4 $\overline{p}p \to K^-K^+$
~ 2150	[4] CARTER	77	CNTR	0	0.7–2.4 $\overline{p}p \to \pi\pi$

[1] See however KLOET 96 who fit $\pi^+\pi^-$ only and find waves only up to $J = 3$ to be important but not significantly resonant.
[2] $I(J^P) = 1(3^-)$ from simultaneous analysis of $p\overline{p} \to \pi^-\pi^+$ and $\pi^0\pi^0$.
[3] $I = 0, 1$. $J^P = 3^-$ from Barrelet-zero analysis.
[4] $I(J^P) = 1(3^-)$ from amplitude analysis.

S-CHANNEL $\overline{N}N$

VALUE (MeV)	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2260±20	[5] ANISOVICH	02	SPEC		0.6–1.9 $p\overline{p} \to \omega\pi^0, \omega\eta\pi^0, \pi^+\pi^-$
~ 2190	[6] CUTTS	78B	CNTR		0.97–3 $\overline{p}p \to \overline{N}N$
2155±15	[6,7] COUPLAND	77	CNTR	0	0.7–2.4 $\overline{p}p \to \overline{p}p$
2193± 2	[6,8] ALSPECTOR	73	CNTR		$\overline{p}p$ S channel
2190±10	[9] ABRAMS	70	CNTR		S channel $\overline{p}N$

[5] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02.
[6] Isospins 0 and 1 not separated.
[7] From a fit to the total elastic cross section.
[8] Referred to as T or T region by ALSPECTOR 73.
[9] Seen as bump in $I = 1$ state. See also COOPER 68. PEASLEE 75 confirm $\overline{p}p$ results of ABRAMS 70, no narrow structure.

$\pi^- p \to \eta\pi\pi$

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2290±20±30	AMELIN	00	VES	37 $\pi^- p \to \eta\pi^+\pi^- n$

$\rho_3(2250)$ WIDTH

$\overline{p}p \rightarrow \pi\pi$ or $K\overline{K}$

VALUE (MeV)	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
~ 220	HASAN	94	RVUE		$\overline{p}p \rightarrow \pi\pi$
~ 287	HASAN	94	RVUE		$\overline{p}p \rightarrow \pi\pi$
~ 60	[10] OAKDEN	94	RVUE		0.36–1.55 $\overline{p}p \rightarrow \pi\pi$
~ 250	[11] MARTIN	80B	RVUE		
~ 200	[11] MARTIN	80C	RVUE		
~ 150	[12] CARTER	78B	CNTR	0	0.7–2.4 $\overline{p}p \rightarrow K^-K^+$
~ 200	[13] CARTER	77	CNTR	0	0.7–2.4 $\overline{p}p \rightarrow \pi\pi$

[10] See however KLOET 96 who fit $\pi^+\pi^-$ only and find waves only up to $J = 3$ to be important but not significantly resonant.
[11] $I(J^P) = 1(3^-)$ from simultaneous analysis of $p\overline{p} \rightarrow \pi^-\pi^+$ and $\pi^0\pi^0$.
[12] $I = 0, 1$. $J^P = 3^-$ from Barrelet-zero analysis.
[13] $I(J^P) = 1(3^-)$ from amplitude analysis.

S-CHANNEL $\overline{N}N$

VALUE (MeV)	DOCUMENT ID		TECN	CHG	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
160 ± 25	[14] ANISOVICH	02	SPEC		0.6–1.9 $p\overline{p} \rightarrow \omega\pi^0, \omega\eta\pi^0, \pi^+\pi^-$
135 ± 75	[15,16] COUPLAND	77	CNTR	0	0.7–2.4 $\overline{p}p \rightarrow \overline{p}p$
98 ± 8	[16] ALSPECTOR	73	CNTR		$\overline{p}p$ S channel
~ 85	[17] ABRAMS	70	CNTR		S channel $\overline{p}N$

[14] From the combined analysis of ANISOVICH 00J, ANISOVICH 01D, ANISOVICH 01E, and ANISOVICH 02.
[15] From a fit to the total elastic cross section.
[16] Isospins 0 and 1 not separated.
[17] Seen as bump in $I = 1$ state. See also COOPER 68. PEASLEE 75 confirm $\overline{p}p$ results of ABRAMS 70, no narrow structure.

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

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$230 \pm 50 \pm 80$	AMELIN 00	VES	37 $\pi^-p \rightarrow \eta\pi^+\pi^-n$

$\rho_3(2250)$ REFERENCES

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MARTIN	80B	NP B176 355	B.R. Martin, D. Morgan	(LOUC, RHEL) JP

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