

$\Delta(1750) P_{31}$

$I(J^P) = \frac{3}{2}(\frac{1}{2}^+)$ Status: *

OMITTED FROM SUMMARY TABLE

$\Delta(1750)$ BREIT-WIGNER MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
≈ 1750 OUR ESTIMATE			
1744 ± 36	MANLEY	92	IPWA $\pi N \rightarrow \pi N$ & $N \pi \pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
1721 ± 61	VRANA	00	Multichannel
1715.2 ± 21.0	¹ CHEW	80	BPWA $\pi^+ p \rightarrow \pi^+ p$
1778.4 ± 9.0	¹ CHEW	80	BPWA $\pi^+ p \rightarrow \pi^+ p$

$\Delta(1750)$ BREIT-WIGNER WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
300 ± 120	MANLEY	92	IPWA $\pi N \rightarrow \pi N$ & $N \pi \pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
70 ± 50	VRANA	00	Multichannel
93.3 ± 55.0	¹ CHEW	80	BPWA $\pi^+ p \rightarrow \pi^+ p$
23.0 ± 29.0	¹ CHEW	80	BPWA $\pi^+ p \rightarrow \pi^+ p$

$\Delta(1750)$ POLE POSITION

REAL PART

VALUE (MeV)	DOCUMENT ID	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •		
1714	VRANA	00 Multichannel

−2×IMAGINARY PART

VALUE (MeV)	DOCUMENT ID	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •		
68	VRANA	00 Multichannel

$\Delta(1750)$ DECAY MODES

Mode
Γ_1 $N \pi$
Γ_2 $N \pi \pi$
Γ_3 $N(1440) \pi$

$\Delta(1750)$ BRANCHING RATIOS

$\Gamma(N\pi)/\Gamma_{\text{total}}$				Γ_1/Γ
VALUE	DOCUMENT ID	TECN	COMMENT	
0.08 ± 0.03	MANLEY	92	IPWA $\pi N \rightarrow \pi N \text{ \& } N\pi\pi$	
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.06 ± 0.09	VRANA	00	Multichannel	
0.18	¹ CHEW	80	BPWA $\pi^+ p \rightarrow \pi^+ p$	
0.20	¹ CHEW	80	BPWA $\pi^+ p \rightarrow \pi^+ p$	

$(\Gamma_i \Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow \Delta(1700) \rightarrow N(1440)\pi$				$(\Gamma_1 \Gamma_3)^{1/2}/\Gamma$
VALUE	DOCUMENT ID	TECN	COMMENT	
$+0.15 \pm 0.03$	MANLEY	92	IPWA $\pi N \rightarrow \pi N \text{ \& } N\pi\pi$	

$\Delta(1750)$ FOOTNOTES

¹ CHEW 80 reports four resonances in the P_{31} wave — see also the $\Delta(1910)$. Problems with this analysis are discussed in section 2.1.11 of HOEHLER 83.

$\Delta(1750)$ REFERENCES

VRANA	00	PRPL 328 181	T.P. Vrana, S.A. Dytman,, T.-S.H. Lee	
MANLEY	92	PR D45 4002	D.M. Manley, E.M. Saleski	(KENT)
Also	84	PR D30 904	D.M. Manley <i>et al.</i>	(VPI)
HOEHLER	83	Landolt-Boernstein 1/9B2	G. Hohler	(KARLT)
CHEW	80	Toronto Conf. 123	D.M. Chew	(LBL)