

$\Delta(2300) H_{39}$

$$I(J^P) = \frac{3}{2}(\frac{9}{2}^+) \text{ Status: } **$$

OMITTED FROM SUMMARY TABLE

The latest GWU analysis (ARNDT 06) finds no evidence for this resonance.

$\Delta(2300)$ BREIT-WIGNER MASS

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
≈ 2300 OUR ESTIMATE			
2204.5 \pm 3.4	CHEW	80	BPWA $\pi^+ p \rightarrow \pi^+ p$
2400 \pm 125	CUTKOSKY	80	IPWA $\pi N \rightarrow \pi N$
2217 \pm 80	HOEHLER	79	IPWA $\pi N \rightarrow \pi N$
2450 \pm 100	HENDRY	78	MPWA $\pi N \rightarrow \pi N$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
2400	CANDLIN	84	DPWA $\pi^+ p \rightarrow \Sigma^+ K^+$

$\Delta(2300)$ BREIT-WIGNER WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
32.3 \pm 1.0	CHEW	80	BPWA $\pi^+ p \rightarrow \pi^+ p$
425 \pm 150	CUTKOSKY	80	IPWA $\pi N \rightarrow \pi N$
300 \pm 100	HOEHLER	79	IPWA $\pi N \rightarrow \pi N$
500 \pm 200	HENDRY	78	MPWA $\pi N \rightarrow \pi N$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
200	CANDLIN	84	DPWA $\pi^+ p \rightarrow \Sigma^+ K^+$

$\Delta(2300)$ POLE POSITION

REAL PART

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
2370 \pm 80	CUTKOSKY	80	IPWA $\pi N \rightarrow \pi N$

– 2×IMAGINARY PART

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
420 \pm 160	CUTKOSKY	80	IPWA $\pi N \rightarrow \pi N$

$\Delta(2300)$ ELASTIC POLE RESIDUE

MODULUS $|r|$

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
10 \pm 4	CUTKOSKY	80	IPWA $\pi N \rightarrow \pi N$

PHASE θ

<u>VALUE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
– 20 \pm 30	CUTKOSKY	80	IPWA $\pi N \rightarrow \pi N$

$\Delta(2300)$ DECAY MODES

Mode
Γ_1 $N\pi$
Γ_2 ΣK

$\Delta(2300)$ BRANCHING RATIOS

$\Gamma(N\pi)/\Gamma_{\text{total}}$	DOCUMENT ID	TECN	COMMENT	Γ_1/Γ
0.05	CHEW	80	BPWA $\pi^+ p \rightarrow \pi^+ p$	
0.06 \pm 0.02	CUTKOSKY	80	IPWA $\pi N \rightarrow \pi N$	
0.03 \pm 0.02	HOEHLER	79	IPWA $\pi N \rightarrow \pi N$	
0.08 \pm 0.02	HENDRY	78	MPWA $\pi N \rightarrow \pi N$	

$(\Gamma_i \Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow \Delta(2300) \rightarrow \Sigma K$	DOCUMENT ID	TECN	COMMENT	$(\Gamma_1 \Gamma_2)^{1/2}/\Gamma$
-0.017	CANDLIN	84	DPWA $\pi^+ p \rightarrow \Sigma^+ K^+$	

$\Delta(2300)$ REFERENCES

ARNDT	06	PR C74 045205	R.A. Arndt <i>et al.</i>	
CANDLIN	84	NP B238 477	D.J. Candlin <i>et al.</i>	(GWU) (EDIN, RAL, LOWC)
CHEW	80	Toronto Conf. 123	D.M. Chew	(LBL) IJP
CUTKOSKY	80	Toronto Conf. 19	R.E. Cutkosky <i>et al.</i>	(CMU, LBL) IJP
Also		PR D20 2839	R.E. Cutkosky <i>et al.</i>	(CMU, LBL)
HOEHLER	79	PDAT 12-1	G. Hohler <i>et al.</i>	(KARLT) IJP
Also		Toronto Conf. 3	R. Koch	(KARLT) IJP
HENDRY	78	PRL 41 222	A.W. Hendry	(IND, LBL) IJP
Also		ANP 136 1	A.W. Hendry	(IND)