$\Delta(2300)\ H_{39}$

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

OMITTED FROM SUMMARY TABLE

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

$\Delta(2300)$ BREIT-WIGNER MASS

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

$\Delta(2300)$ BREIT-WIGNER WIDTH

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

$\Delta(2300)$ POLE POSITION

REAL PART

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
2370±80	CUTKOSKY	80	IPWA	$\pi N \to \pi N$

−2×IMAGINARY PART

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
420±160	CUTKOSKY	80	IPWA	$\pi N \to \pi N$

$\Delta(2300)$ ELASTIC POLE RESIDUE

MODULUS $|r|$

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
10±4	CUTKOSKY	80	IPWA	$\pi N \to \pi N$

PHASE θ

VALUE (°)	DOCUMENT ID		TECN	COMMENT
−20±30	CUTKOSKY	80	IPWA	$\pi N \to \pi N$

$\Delta(2300)$ DECAY MODES

	Mode
Γ_1	$N\pi$
Γ_2	ΣK

$\Delta(2300)$ BRANCHING RATIOS

$\Gamma(N\pi)/\Gamma_{\text{total}}$ $\qquad\qquad$ Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.05	CHEW	80	BPWA	$\pi^+ p \to \pi^+ p$
0.06 ± 0.02	CUTKOSKY	80	IPWA	$\pi N \to \pi N$
0.03 ± 0.02	HOEHLER	79	IPWA	$\pi N \to \pi N$
0.08 ± 0.02	HENDRY	78	MPWA	$\pi N \to \pi N$

$(\Gamma_i \Gamma_f)^{\frac{1}{2}}/\Gamma_{\text{total}}$ in $N\pi \to \Delta(2300) \to \Sigma K$ $\qquad$ $(\Gamma_1 \Gamma_2)^{\frac{1}{2}}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
-0.017	CANDLIN	84	DPWA	$\pi^+ p \to \Sigma^+ K^+$

$\Delta(2300)$ REFERENCES

ARNDT	06	PR C74 045205	R.A. Arndt *et al.*	(GWU)
CANDLIN	84	NP B238 477	D.J. Candlin *et al.*	(EDIN, RAL, LOWC)
CHEW	80	Toronto Conf. 123	D.M. Chew	(LBL) IJP
CUTKOSKY	80	Toronto Conf. 19	R.E. Cutkosky *et al.*	(CMU, LBL) IJP
Also		PR D20 2839	R.E. Cutkosky *et al.*	(CMU, LBL)
HOEHLER	79	PDAT 12-1	G. Hohler *et al.*	(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)