

# Δ(2300) H<sub>39</sub>

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

OMITTED FROM SUMMARY TABLE

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

## Δ(2300) BREIT-WIGNER MASS

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>≈ 2300 OUR ESTIMATE</b>			
2204.5 ± 3.4	CHEW	80	BPWA π <sup>+</sup> p → π <sup>+</sup> p
2400 ± 125	CUTKOSKY	80	IPWA πN → πN
2217 ± 80	HOEHLER	79	IPWA πN → πN
2450 ± 100	HENDRY	78	MPWA πN → πN
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
2400	CANDLIN	84	DPWA π <sup>+</sup> p → Σ <sup>+</sup> K <sup>+</sup>

## Δ(2300) BREIT-WIGNER WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
32.3 ± 1.0	CHEW	80	BPWA π <sup>+</sup> p → π <sup>+</sup> p
425 ± 150	CUTKOSKY	80	IPWA πN → πN
300 ± 100	HOEHLER	79	IPWA πN → πN
500 ± 200	HENDRY	78	MPWA πN → πN
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
200	CANDLIN	84	DPWA π <sup>+</sup> p → Σ <sup>+</sup> K <sup>+</sup>

## Δ(2300) POLE POSITION

### REAL PART

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
2370 ± 80	CUTKOSKY	80	IPWA πN → πN

### − 2×IMAGINARY PART

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
420 ± 160	CUTKOSKY	80	IPWA πN → πN

## Δ(2300) ELASTIC POLE RESIDUE

### MODULUS |r|

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
10 ± 4	CUTKOSKY	80	IPWA πN → πN

### PHASE θ

<u>VALUE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
− 20 ± 30	CUTKOSKY	80	IPWA πN → πN

## $\Delta(2300)$ DECAY MODES

Mode
$\Gamma_1$ $N\pi$
$\Gamma_2$ $\Sigma K$

## $\Delta(2300)$ BRANCHING RATIOS

$\Gamma(N\pi)/\Gamma_{\text{total}}$	DOCUMENT ID	TECN	COMMENT	$\Gamma_1/\Gamma$
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)
CHEW	80	Toronto Conf. 123	D.M. Chew	(EDIN, RAL, LOWC)
CUTKOSKY	80	Toronto Conf. 19	R.E. Cutkosky <i>et al.</i>	(LBL) IJP
Also		PR D20 2839	R.E. Cutkosky <i>et al.</i>	(CMU, LBL) IJP
HOEHLER	79	PDAT 12-1	G. Hohler <i>et al.</i>	(CMU, LBL)
Also		Toronto Conf. 3	R. Koch	(KARLT) IJP
HENDRY	78	PRL 41 222	A.W. Hendry	(KARLT) IJP
Also		ANP 136 1	A.W. Hendry	(IND, LBL) IJP
				(IND)