

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

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

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>
<b><math>\approx 2300</math> OUR ESTIMATE</b>			
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 $\theta$

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

## $\Delta(2300)$ 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) (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)