

$\Delta(2200) 7/2^-$  $I(J^P) = \frac{3}{2}(\frac{7}{2}^-)$  Status: \*

OMITTED FROM SUMMARY TABLE

The various analyses are not in good agreement.

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

 **$\Delta(2200)$  BREIT-WIGNER MASS**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b><math>\approx 2200</math> OUR ESTIMATE</b>			
2200 $\pm$ 80	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$
2215 $\pm$ 60	HOEHLER 79	IPWA	$\pi N \rightarrow \pi N$
2280 $\pm$ 80	HENDRY 78	MPWA	$\pi N \rightarrow \pi N$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
2280 $\pm$ 40	CANDLIN 84	DPWA	$\pi^+ p \rightarrow \Sigma^+ K^+$

 **$\Delta(2200)$  BREIT-WIGNER WIDTH**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
450 $\pm$ 100	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$
400 $\pm$ 100	HOEHLER 79	IPWA	$\pi N \rightarrow \pi N$
400 $\pm$ 150	HENDRY 78	MPWA	$\pi N \rightarrow \pi N$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
400 $\pm$ 50	CANDLIN 84	DPWA	$\pi^+ p \rightarrow \Sigma^+ K^+$

 **$\Delta(2200)$  POLE POSITION****REAL PART**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
2100 $\pm$ 50	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$

**-2 $\times$ IMAGINARY PART**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
340 $\pm$ 80	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$

 **$\Delta(2200)$  ELASTIC POLE RESIDUE****MODULUS  $|r|$** 

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
8 $\pm$ 3	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$

**PHASE  $\theta$** 

<u>VALUE (<math>^\circ</math>)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
-70 $\pm$ 40	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$

## $\Delta(2200)$ DECAY MODES

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

## $\Delta(2200)$ BRANCHING RATIOS

$\Gamma(N\pi)/\Gamma_{\text{total}}$				$\Gamma_1/\Gamma$
VALUE (%)	DOCUMENT ID	TECN	COMMENT	
$6 \pm 2$	CUTKOSKY	80	IPWA $\pi N \rightarrow \pi N$	
$5 \pm 2$	HOEHLER	79	IPWA $\pi N \rightarrow \pi N$	
$9 \pm 2$	HENDRY	78	MPWA $\pi N \rightarrow \pi N$	

  

$(\Gamma_i \Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow \Delta(2200) \rightarrow \Sigma K$				$(\Gamma_1 \Gamma_2)^{1/2}/\Gamma$
VALUE	DOCUMENT ID	TECN	COMMENT	
$-0.014 \pm 0.005$	CANDLIN	84	DPWA $\pi^+ p \rightarrow \Sigma^+ K^+$	

## $\Delta(2200)$ 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)
CUTKOSKY	80	Toronto Conf. 19	R.E. Cutkosky <i>et al.</i>	(EDIN, RAL, LOWC)
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) IJP
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)