

# $\Delta(2000) F_{35}$

$$I(J^P) = \frac{3}{2}(\frac{5}{2}^+) \text{ Status: } **$$

OMITTED FROM SUMMARY TABLE

## $\Delta(2000)$ BREIT-WIGNER MASS

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b><math>\approx 2000</math> OUR ESTIMATE</b>			
$1752 \pm 32$	MANLEY	92 IPWA	$\pi N \rightarrow \pi N \ \& \ N\pi\pi$
$2200 \pm 125$	CUTKOSKY	80 IPWA	$\pi N \rightarrow \pi N$

## $\Delta(2000)$ BREIT-WIGNER WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$251 \pm 93$	MANLEY	92 IPWA	$\pi N \rightarrow \pi N \ \& \ N\pi\pi$
$400 \pm 125$	CUTKOSKY	80 IPWA	$\pi N \rightarrow \pi N$

## $\Delta(2000)$ POLE POSITION

### REAL PART

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$2150 \pm 100$	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>
$350 \pm 100$	CUTKOSKY	80 IPWA	$\pi N \rightarrow \pi N$

## $\Delta(2000)$ ELASTIC POLE RESIDUE

### MODULUS $|r|$

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$16 \pm 5$	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>
$150 \pm 90$	CUTKOSKY	80 IPWA	$\pi N \rightarrow \pi N$

## $\Delta(2000)$ DECAY MODES

Mode
$\Gamma_1 \quad N\pi$
$\Gamma_2 \quad N\pi\pi$
$\Gamma_3 \quad \Delta(1232)\pi, P\text{-wave}$
$\Gamma_4 \quad \Delta(1232)\pi, F\text{-wave}$
$\Gamma_5 \quad N\rho, S=3/2, P\text{-wave}$

## $\Delta(2000)$ BRANCHING RATIOS

$\Gamma(N\pi)/\Gamma_{\text{total}}$	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	$\Gamma_1/\Gamma$
<u>VALUE</u>				
0.02±0.01	MANLEY	92	IPWA	$\pi N \rightarrow \pi N \ \& \ N\pi\pi$
0.07±0.04	CUTKOSKY	80	IPWA	$\pi N \rightarrow \pi N$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow \Delta(2000) \rightarrow \Delta(1232)\pi$ , <i>P-wave</i>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	$(\Gamma_1\Gamma_3)^{1/2}/\Gamma$
<u>VALUE</u>				
+0.07±0.03	MANLEY	92	IPWA	$\pi N \rightarrow \pi N \ \& \ N\pi\pi$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow \Delta(2000) \rightarrow \Delta(1232)\pi$ , <i>F-wave</i>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	$(\Gamma_1\Gamma_4)^{1/2}/\Gamma$
<u>VALUE</u>				
+0.09±0.04	MANLEY	92	IPWA	$\pi N \rightarrow \pi N \ \& \ N\pi\pi$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow \Delta(2000) \rightarrow N\rho$ , <i>S=3/2, P-wave</i>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	$(\Gamma_1\Gamma_5)^{1/2}/\Gamma$
<u>VALUE</u>				
-0.06±0.01	MANLEY	92	IPWA	$\pi N \rightarrow \pi N \ \& \ N\pi\pi$

## $\Delta(2000)$ REFERENCES

MANLEY	92	PR D45 4002	+Saleski	(KENT) IJP
Also	84	PR D30 904	Manley, Arndt, Goradia, Teplitz	(VPI)
CUTKOSKY	80	Toronto Conf. 19	+Forsyth, Babcock, Kelly, Hendrick	(CMU, LBL)
Also	79	PR D20 2839	Cutkosky, Forsyth, Hendrick, Kelly	(CMU, LBL)