

$\Delta(2400) 9/2^-$

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

OMITTED FROM SUMMARY TABLE

**$\Delta(2400)$  POLE POSITION**

**REAL PART**

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
1983	ARNDT 06	DPWA	$\pi N \rightarrow \pi N, \eta N$
$2260 \pm 60$	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$

**-2xIMAGINARY PART**

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
878	ARNDT 06	DPWA	$\pi N \rightarrow \pi N, \eta N$
$320 \pm 160$	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$

**$\Delta(2400)$  ELASTIC POLE RESIDUE**

**MODULUS  $|r|$**

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
24	ARNDT 06	DPWA	$\pi N \rightarrow \pi N, \eta N$
$8 \pm 4$	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$

**PHASE  $\theta$**

VALUE ( $^\circ$ )	DOCUMENT ID	TECN	COMMENT
-139	ARNDT 06	DPWA	$\pi N \rightarrow \pi N, \eta N$
$-25 \pm 15$	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$

**$\Delta(2400)$  BREIT-WIGNER MASS**

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
$2643 \pm 141$	ARNDT 06	DPWA	$\pi N \rightarrow \pi N, \eta N$
$2300 \pm 100$	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$
$2468 \pm 50$	HOEHLER 79	IPWA	$\pi N \rightarrow \pi N$

**$\Delta(2400)$  BREIT-WIGNER WIDTH**

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
$895 \pm 432$	ARNDT 06	DPWA	$\pi N \rightarrow \pi N, \eta N$
$330 \pm 100$	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$
$480 \pm 100$	HOEHLER 79	IPWA	$\pi N \rightarrow \pi N$

**$\Delta(2400)$  DECAY MODES**

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1 \quad N\pi$	3-9 %

## $\Delta(2400)$ BRANCHING RATIOS

$\Gamma(N\pi)/\Gamma_{\text{total}}$	$\Gamma_1/\Gamma$
<u>VALUE (%)</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
6.4 ± 2.2	ARNDT   06   DPWA $\pi N \rightarrow \pi N, \eta N$
5 ± 2	CUTKOSKY   80   IPWA $\pi N \rightarrow \pi N$
6 ± 3	HOEHLER   79   IPWA $\pi N \rightarrow \pi N$

### $\Delta(2400)$ PHOTON DECAY AMPLITUDES AT THE POLE

#### $\Delta(2400) \rightarrow N\gamma$ , helicity-1/2 amplitude $A_{1/2}$

<u>MODULUS (<math>\text{GeV}^{-1/2}</math>)</u>	<u>PHASE (<math>^\circ</math>)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>
-0.128 <sup>+0.046</sup> <sub>-0.012</sub>	118 <sup>+24</sup> <sub>-3</sub>	ROENCHEN	14   DPWA

#### $\Delta(2400) \rightarrow N\gamma$ , helicity-3/2 amplitude $A_{3/2}$

<u>MODULUS (<math>\text{GeV}^{-1/2}</math>)</u>	<u>PHASE (<math>^\circ</math>)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>
-0.115 <sup>+0.042</sup> <sub>-0.024</sub>	140 <sup>+17</sup> <sub>-28</sub>	ROENCHEN	14   DPWA

### $\Delta(2400)$ REFERENCES

ROENCHEN	14	EPJ A50 101	D. Roenchen <i>et al.</i>	
Also		EPJ A51 63 (errat.)	D. Roenchen <i>et al.</i>	
ARNDT	06	PR C74 045205	R.A. Arndt <i>et al.</i>	(GWU)
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