

**$N(2200) D_{15}$** 

$$I(J^P) = \frac{1}{2}(\frac{5}{2}^-) \text{ Status: } **$$

**OMITTED FROM SUMMARY TABLE**

The mass is not well determined. A few early results have been omitted.

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

 **$N(2200)$  BREIT-WIGNER MASS**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>≈ 2200 OUR ESTIMATE</b>			
1900	BELL	83	DPWA $\pi^- p \rightarrow \Lambda K^0$
2180 ± 80	CUTKOSKY	80	IPWA $\pi N \rightarrow \pi N$
1920	SAXON	80	DPWA $\pi^- p \rightarrow \Lambda K^0$
2228 ± 30	HOEHLER	79	IPWA $\pi N \rightarrow \pi N$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
2240 ± 65	BATINIC	95	DPWA $\pi N \rightarrow N\pi, N\eta$

 **$N(2200)$  BREIT-WIGNER WIDTH**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
130	BELL	83	DPWA $\pi^- p \rightarrow \Lambda K^0$
400 ± 100	CUTKOSKY	80	IPWA $\pi N \rightarrow \pi N$
220	SAXON	80	DPWA $\pi^- p \rightarrow \Lambda K^0$
310 ± 50	HOEHLER	79	IPWA $\pi N \rightarrow \pi N$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
761 ± 139	BATINIC	95	DPWA $\pi N \rightarrow N\pi, N\eta$

 **$N(2200)$  POLE POSITION****REAL PART**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
2100 ± 60	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>
360 ± 80	CUTKOSKY	80	IPWA $\pi N \rightarrow \pi N$

 **$N(2200)$  ELASTIC POLE RESIDUE****MODULUS  $|r|$** 

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
20 ± 10	CUTKOSKY	80	IPWA $\pi N \rightarrow \pi N$

## PHASE $\theta$

VALUE ( $^\circ$ )	DOCUMENT ID	TECN	COMMENT
$-90 \pm 50$	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$

## $N(2200)$ DECAY MODES

Mode
$\Gamma_1$ $N\pi$
$\Gamma_2$ $N\eta$
$\Gamma_3$ $\Lambda K$

## $N(2200)$ BRANCHING RATIOS

### $\Gamma(N\pi)/\Gamma_{\text{total}}$ $\Gamma_1/\Gamma$

VALUE	DOCUMENT ID	TECN	COMMENT
$0.10 \pm 0.03$	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$
$0.07 \pm 0.02$	HOEHLER 79	IPWA	$\pi N \rightarrow \pi N$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
$0.08 \pm 0.04$	BATINIC 95	DPWA	$\pi N \rightarrow N\pi, N\eta$

### $\Gamma(N\eta)/\Gamma_{\text{total}}$ $\Gamma_2/\Gamma$

VALUE	DOCUMENT ID	TECN	COMMENT
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
$0.001 \pm 0.01$	BATINIC 95	DPWA	$\pi N \rightarrow N\pi, N\eta$

### $(\Gamma_i \Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow N(2200) \rightarrow N\eta$ $(\Gamma_1 \Gamma_2)^{1/2}/\Gamma$

VALUE	DOCUMENT ID	TECN	COMMENT
0.066	BAKER 79	DPWA	$\pi^- p \rightarrow n\eta$

### $(\Gamma_i \Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow N(2200) \rightarrow \Lambda K$ $(\Gamma_1 \Gamma_3)^{1/2}/\Gamma$

VALUE	DOCUMENT ID	TECN	COMMENT
-0.03	BELL 83	DPWA	$\pi^- p \rightarrow \Lambda K^0$
-0.05	SAXON 80	DPWA	$\pi^- p \rightarrow \Lambda K^0$

## $N(2200)$ REFERENCES

ARNDT	06	PR C74 045205	R.A. Arndt <i>et al.</i>	(GWU)
BATINIC	95	PR C51 2310	M. Batinic <i>et al.</i>	(BOSK, UCLA)
Also		PR C57 1004 (erratum)	M. Batinic <i>et al.</i>	
BELL	83	NP B222 389	K.W. Bell <i>et al.</i>	(RL) 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)
SAXON	80	NP B162 522	D.H. Saxon <i>et al.</i>	(RHEL, BRIS) IJP
BAKER	79	NP B156 93	R.D. Baker <i>et al.</i>	(RHEL) IJP
HOEHLER	79	PDAT 12-1	G. Hohler <i>et al.</i>	(KARLT) IJP
Also		Toronto Conf. 3	R. Koch	(KARLT) IJP