

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

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|---|-------------|------|--|
| ≈ 2200 OUR ESTIMATE | | | |
| 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

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|---|-------------|------|--|
| 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

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|-------------|-------------|------|--------------------------------|
| 2100 ± 60 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |

− 2×IMAGINARY PART

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|-------------|-------------|------|--------------------------------|
| 360 ± 80 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |

N(2200) ELASTIC POLE RESIDUE

MODULUS $|r|$

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|-------------|-------------|------|--------------------------------|
| 20 ± 10 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |

PHASE θ

| VALUE (°) | DOCUMENT ID | TECN | COMMENT |
|--------------|-------------|------|---------------------------|
| -90 ± 50 | CUTKOSKY 80 | IPWA | $\pi N \rightarrow \pi N$ |

N(2200) DECAY MODES

| Mode |
|------------------------|
| Γ_1 $N\pi$ |
| Γ_2 $N\eta$ |
| Γ_3 ΛK |

N(2200) BRANCHING RATIOS

$\Gamma(N\pi)/\Gamma_{\text{total}}$ Γ_1/Γ

| VALUE | DOCUMENT ID | TECN | COMMENT |
|-----------------|-------------|------|---------------------------|
| 0.10 ± 0.03 | CUTKOSKY 80 | IPWA | $\pi N \rightarrow \pi N$ |
| 0.07 ± 0.02 | HOEHLER 79 | IPWA | $\pi N \rightarrow \pi N$ |

• • • We do not use the following data for averages, fits, limits, etc. • • •

| | | | |
|-----------------|------------|------|---------------------------------|
| 0.08 ± 0.04 | BATINIC 95 | DPWA | $\pi N \rightarrow N\pi, N\eta$ |
|-----------------|------------|------|---------------------------------|

$\Gamma(N\eta)/\Gamma_{\text{total}}$ Γ_2/Γ

| VALUE | DOCUMENT ID | TECN | COMMENT |
|------------------|-------------|------|---------------------------------|
| 0.001 ± 0.01 | BATINIC 95 | DPWA | $\pi N \rightarrow N\pi, N\eta$ |

• • • We do not use the following data for averages, fits, limits, etc. • • •

$(\Gamma_i \Gamma_f)^{1/2}/\Gamma_{\text{total}}$ 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 |