

$N(2100) P_{11}$

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

OMITTED FROM SUMMARY TABLE

 $N(2100)$ BREIT-WIGNER MASS

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|--------------------|-------------|--|
| ≈ 2100 OUR ESTIMATE | | | |
| 1885 ± 30 | MANLEY | 92 | IPWA $\pi N \rightarrow \pi N$ & $N\pi\pi$ |
| 2125 ± 75 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |
| 2050 ± 20 | HOEHLER | 79 | IPWA $\pi N \rightarrow \pi N$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| 2084 ± 93 | VRANA | 00 | DPWA Multichannel |
| 1986 ± 26 ⁺¹⁰ ₋₃₀ | PLOETZKE | 98 | SPEC $\gamma p \rightarrow p\eta'(958)$ |
| 2203 ± 70 | BATINIC | 95 | DPWA $\pi N \rightarrow N\pi, N\eta$ |

 $N(2100)$ BREIT-WIGNER WIDTH

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|--------------------|-------------|--|
| 113 ± 44 | MANLEY | 92 | IPWA $\pi N \rightarrow \pi N$ & $N\pi\pi$ |
| 260 ± 100 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |
| 200 ± 30 | HOEHLER | 79 | IPWA $\pi N \rightarrow \pi N$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| 1077 ± 643 | VRANA | 00 | DPWA Multichannel |
| 296 ± 100 ⁺⁶⁰ ₋₁₀ | PLOETZKE | 98 | SPEC $\gamma p \rightarrow p\eta'(958)$ |
| 418 ± 171 | BATINIC | 95 | DPWA $\pi N \rightarrow N\pi, N\eta$ |

 $N(2100)$ POLE POSITION**REAL PART**

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|--------------------|-------------|--|
| 2120 ± 40 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| 1810 | VRANA | 00 | DPWA Multichannel |
| not seen | ARNDT | 91 | DPWA $\pi N \rightarrow \pi N$ Soln SM90 |

-2×IMAGINARY PART

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|--------------------|-------------|--|
| 240 ± 80 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| 622 | VRANA | 00 | DPWA Multichannel |
| not seen | ARNDT | 91 | DPWA $\pi N \rightarrow \pi N$ Soln SM90 |

N(2100) ELASTIC POLE RESIDUE

MODULUS $|r|$

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------------|--------------------|-------------|--------------------------------|
| 14 ± 7 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |

PHASE θ

| <u>VALUE (°)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|------------------|--------------------|-------------|--------------------------------|
| 35 ± 25 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |

N(2100) DECAY MODES

| Mode | Fraction (Γ_i/Γ) |
|---|--------------------------------|
| Γ_1 $N\pi$ | (61 ± 60) % |
| Γ_2 $N\eta$ | |
| Γ_3 ΛK | |
| Γ_4 $N\pi\pi$ | |
| Γ_5 $\Delta(1232)\pi$, <i>P</i> -wave | |
| Γ_6 $N\rho$, $S=1/2$, <i>P</i> -wave | |
| Γ_7 $N(\pi\pi)_{S\text{-wave}}^{I=0}$ | |

N(2100) BRANCHING RATIOS

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

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------|--------------------|-------------|--|
| 0.15 ± 0.06 | MANLEY | 92 | IPWA $\pi N \rightarrow \pi N$ & $N\pi\pi$ |
| 0.12 ± 0.03 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |
| 0.10 ± 0.04 | HOEHLER | 79 | IPWA $\pi N \rightarrow \pi N$ |

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

| | | | |
|-------------|---------|----|---|
| 0.02 ± 0.05 | VRANA | 00 | DPWA Multichannel |
| 0.11 ± 0.07 | BATINIC | 95 | DPWA $\pi N \rightarrow N\pi$, $N\eta$ |

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

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------|--------------------|-------------|----------------|
|--------------|--------------------|-------------|----------------|

0.61 ± 0.61 VRANA 00 DPWA Multichannel

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

| | | | |
|-------------|---------|----|---|
| 0.86 ± 0.07 | BATINIC | 95 | DPWA $\pi N \rightarrow N\pi$, $N\eta$ |
|-------------|---------|----|---|

$\Gamma(\Lambda K)/\Gamma_{\text{total}}$ Γ_3/Γ

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------|--------------------|-------------|----------------|
|--------------|--------------------|-------------|----------------|

0.21 ± 0.20 VRANA 00 DPWA Multichannel

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow N(2100) \rightarrow \Delta(1232)\pi$, *P*-wave $(\Gamma_1\Gamma_5)^{1/2}/\Gamma$

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------|--------------------|-------------|----------------|
|--------------|--------------------|-------------|----------------|

−0.19 ± 0.08 MANLEY 92 IPWA $\pi N \rightarrow \pi N$ & $N\pi\pi$

$\Gamma(\Delta(1232)\pi, P\text{-wave})/\Gamma_{\text{total}}$ Γ_5/Γ

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------|--------------------|-------------|-------------------|
| 0.02±0.01 | VRANA | 00 | DPWA Multichannel |

$\Gamma(N\rho, S=1/2, P\text{-wave})/\Gamma_{\text{total}}$ Γ_6/Γ

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------|--------------------|-------------|-------------------|
| 0.04±0.01 | VRANA | 00 | DPWA Multichannel |

$\Gamma(N(\pi\pi)_{S\text{-wave}}^{I=0})/\Gamma_{\text{total}}$ Γ_7/Γ

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------|--------------------|-------------|-------------------|
| 0.10±0.01 | VRANA | 00 | DPWA Multichannel |

N(2100) REFERENCES

| | | | | |
|----------|----|-----------------------|---------------------------------------|-----------------------|
| VRANA | 00 | PRPL 328 181 | T.P. Vrana, S.A. Dytman,, T.-S.H. Lee | (PITT+) |
| PLOETZKE | 98 | PL B444 555 | R. Ploetzke <i>et al.</i> | (Bonn SAPHIR Collab.) |
| BATINIC | 95 | PR C51 2310 | M. Batinic <i>et al.</i> | (BOSK, UCLA) |
| Also | 98 | PR C57 1004 (erratum) | M. Batinic <i>et al.</i> | |
| MANLEY | 92 | PR D45 4002 | D.M. Manley, E.M. Saleski | (KENT) IJP |
| Also | 84 | PR D30 904 | D.M. Manley <i>et al.</i> | (VPI) |
| ARNDT | 91 | PR D43 2131 | R.A. Arndt <i>et al.</i> | (VPI, TELE) IJP |
| CUTKOSKY | 80 | Toronto Conf. 19 | R.E. Cutkosky <i>et al.</i> | (CMU, LBL) IJP |
| Also | 79 | 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 | 80 | Toronto Conf. 3 | R. Koch | (KARLT) IJP |