

N(2000) F₁₅

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

OMITTED FROM SUMMARY TABLE

Older results have been retained simply because there is little information at all about this possible state.

N(2000) BREIT-WIGNER MASS

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|---|-----------------------|------|--|
| ≈ 2000 OUR ESTIMATE | | | |
| 1903±87 | MANLEY | 92 | IPWA $\pi N \rightarrow \pi N$ & $N\pi\pi$ |
| 1882±10 | HOEHLER | 79 | IPWA $\pi N \rightarrow \pi N$ |
| 2025 | AYED | 76 | IPWA $\pi N \rightarrow \pi N$ |
| 1970 | ¹ LANGBEIN | 73 | IPWA $\pi N \rightarrow \Sigma K$ (sol. 2) |
| 2175 | ALMEHED | 72 | IPWA $\pi N \rightarrow \pi N$ |
| 1930 | DEANS | 72 | MPWA $\gamma p \rightarrow \Lambda K$ (sol. D) |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| 1814 | ARNDT | 95 | DPWA $\pi N \rightarrow N\pi$ |

N(2000) BREIT-WIGNER WIDTH

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|---|-----------------------|------|--|
| 490±310 | MANLEY | 92 | IPWA $\pi N \rightarrow \pi N$ & $N\pi\pi$ |
| 95± 20 | HOEHLER | 79 | IPWA $\pi N \rightarrow \pi N$ |
| 157 | AYED | 76 | IPWA $\pi N \rightarrow \pi N$ |
| 170 | ¹ LANGBEIN | 73 | IPWA $\pi N \rightarrow \Sigma K$ (sol. 2) |
| 150 | ALMEHED | 72 | IPWA $\pi N \rightarrow \pi N$ |
| 112 | DEANS | 72 | MPWA $\gamma p \rightarrow \Lambda K$ (sol. D) |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| 176 | ARNDT | 95 | DPWA $\pi N \rightarrow N\pi$ |

N(2000) DECAY MODES

| Mode |
|---------------------------------------|
| Γ_1 $N\pi$ |
| Γ_2 $N\eta$ |
| Γ_3 ΛK |
| Γ_4 ΣK |
| Γ_5 $N\pi\pi$ |
| Γ_6 $\Delta(1232)\pi$, P-wave |
| Γ_7 $N\rho$, S=3/2, P-wave |
| Γ_8 $N\rho$, S=3/2, F-wave |
| Γ_9 $p\gamma$ |

N(2000) BRANCHING RATIOS

| $\Gamma(N\pi)/\Gamma_{\text{total}}$ | <i>DOCUMENT ID</i> | <i>TECN</i> | <i>COMMENT</i> | Γ_1/Γ |
|---|-----------------------|-------------|----------------|---|
| 0.08±0.05 | MANLEY | 92 | IPWA | $\pi N \rightarrow \pi N \ \& \ N\pi\pi$ |
| 0.04±0.02 | HOEHLER | 79 | IPWA | $\pi N \rightarrow \pi N$ |
| 0.08 | AYED | 76 | IPWA | $\pi N \rightarrow \pi N$ |
| 0.25 | ALMEHED | 72 | IPWA | $\pi N \rightarrow \pi N$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | |
| 0.10 | ARNDT | 95 | DPWA | $\pi N \rightarrow N\pi$ |
| $(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow N(2000) \rightarrow N\eta$ | | | | $(\Gamma_1\Gamma_2)^{1/2}/\Gamma$ |
| VALUE | DOCUMENT ID | TECN | COMMENT | |
| +0.03 | BAKER | 79 | DPWA | $\pi^- p \rightarrow n\eta$ |
| $(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow N(2000) \rightarrow \Lambda K$ | | | | $(\Gamma_1\Gamma_3)^{1/2}/\Gamma$ |
| VALUE | DOCUMENT ID | TECN | COMMENT | |
| not seen | SAXON | 80 | DPWA | $\pi^- p \rightarrow \Lambda K^0$ |
| $(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow N(2000) \rightarrow \Sigma K$ | | | | $(\Gamma_1\Gamma_4)^{1/2}/\Gamma$ |
| VALUE | DOCUMENT ID | TECN | COMMENT | |
| 0.022 | ² DEANS | 75 | DPWA | $\pi N \rightarrow \Sigma K$ |
| 0.05 | ¹ LANGBEIN | 73 | IPWA | $\pi N \rightarrow \Sigma K$ (sol. 2) |
| $(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow N(2000) \rightarrow \Delta(1232)\pi$, P-wave | | | | $(\Gamma_1\Gamma_6)^{1/2}/\Gamma$ |
| VALUE | DOCUMENT ID | TECN | COMMENT | |
| +0.10±0.06 | MANLEY | 92 | IPWA | $\pi N \rightarrow \pi N \ \& \ N\pi\pi$ |
| $(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow N(2000) \rightarrow N\rho$, S=3/2, P-wave | | | | $(\Gamma_1\Gamma_7)^{1/2}/\Gamma$ |
| VALUE | DOCUMENT ID | TECN | COMMENT | |
| -0.22±0.08 | MANLEY | 92 | IPWA | $\pi N \rightarrow \pi N \ \& \ N\pi\pi$ |
| $(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow N(2000) \rightarrow N\rho$, S=3/2, F-wave | | | | $(\Gamma_1\Gamma_8)^{1/2}/\Gamma$ |
| VALUE | DOCUMENT ID | TECN | COMMENT | |
| +0.11±0.06 | MANLEY | 92 | IPWA | $\pi N \rightarrow \pi N \ \& \ N\pi\pi$ |
| $(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $p\gamma \rightarrow N(2000) \rightarrow \Lambda K$ | | | | $(\Gamma_9\Gamma_3)^{1/2}/\Gamma$ |
| VALUE | DOCUMENT ID | TECN | COMMENT | |
| 0.0022 | DEANS | 72 | MPWA | $\gamma p \rightarrow \Lambda K$ (sol. D) |

N(2000) FOOTNOTES

¹ Not seen in solution 1 of LANGBEIN 73.

² Value given is from solution 1 of DEANS 75; not present in solutions 2, 3, or 4.

N(2000) REFERENCES

| | | | | |
|----------|----|-------------------|---|------------------|
| ARNDT | 95 | PR C52 2120 | +Strakovsky, Workman, Pavan | (VPI, BRCO) |
| MANLEY | 92 | PR D45 4002 | +Saleski | (KENT) IJP |
| Also | 84 | PR D30 904 | Manley, Arndt, Goradia, Teplitz | (VPI) |
| SAXON | 80 | NP B162 522 | +Baker, Bell, Blissett, Bloodworth+ | (RHEL, BRIS) IJP |
| BAKER | 79 | NP B156 93 | +Brown, Clark, Davies, Depagter, Evans+ | (RHEL) IJP |
| HOEHLER | 79 | PDAT 12-1 | +Kaiser, Koch, Pietarinen | (KARLT) IJP |
| Also | 80 | Toronto Conf. 3 | Koch | (KARLT) IJP |
| AYED | 76 | Thesis CEA-N-1921 | | (SACL) IJP |
| DEANS | 75 | NP B96 90 | +Mitchell, Montgomery+ | (SFLA, ALAH) IJP |
| LANGBEIN | 73 | NP B53 251 | +Wagner | (MUNI) IJP |
| ALMEHED | 72 | NP B40 157 | +Lovell | (LUND, RUTG) IJP |
| DEANS | 72 | PR D6 1906 | +Jacobs, Lyons, Montgomery | (SFLA) IJP |
