$N(2000)\ F_{15}$

$I(J^P) = \frac{1}{2}(\frac{5}{2}^+)$ 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	$\pi N \to \pi N$ & $N \pi\pi$
1882±10	HOEHLER	79	IPWA	$\pi N \to \pi N$
2025	AYED	76	IPWA	$\pi N \to \pi N$
1970	[1] LANGBEIN	73	IPWA	$\pi N \to \Sigma K$ (sol. 2)
2175	ALMEHED	72	IPWA	$\pi N \to \pi N$
1930	DEANS	72	MPWA	$\gamma p \to \Lambda K$ (sol. D)
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1814	ARNDT	95	DPWA	$\pi N \to N \pi$

$N(2000)$ BREIT-WIGNER WIDTH

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

$N(2000)$ 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

$\Gamma(N\pi)/\Gamma_{total}$ — Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.08 ± 0.05	MANLEY	92	IPWA	$\pi N \to \pi N$ & $N\pi\pi$
0.04 ± 0.02	HOEHLER	79	IPWA	$\pi N \to \pi N$
0.08	AYED	76	IPWA	$\pi N \to \pi N$
0.25	ALMEHED	72	IPWA	$\pi N \to \pi N$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.10	ARNDT	95	DPWA	$\pi N \to N\pi$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\pi \to N(2000) \to N\eta$ — $(\Gamma_1\Gamma_2)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
$+0.03$	BAKER	79	DPWA	$\pi^- p \to n\eta$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\pi \to N(2000) \to \Lambda K$ — $(\Gamma_1\Gamma_3)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	SAXON	80	DPWA	$\pi^- p \to \Lambda K^0$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\pi \to N(2000) \to \Sigma K$ — $(\Gamma_1\Gamma_4)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
0.022	[2] DEANS	75	DPWA	$\pi N \to \Sigma K$
0.05	[1] LANGBEIN	73	IPWA	$\pi N \to \Sigma K$ (sol. 2)

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\pi \to N(2000) \to \Delta(1232)\pi$, P-wave — $(\Gamma_1\Gamma_6)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
$+0.10\pm0.06$	MANLEY	92	IPWA	$\pi N \to \pi N$ & $N\pi\pi$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\pi \to N(2000) \to N\rho$, S=3/2, P-wave — $(\Gamma_1\Gamma_7)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
-0.22 ± 0.08	MANLEY	92	IPWA	$\pi N \to \pi N$ & $N\pi\pi$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\pi \to N(2000) \to N\rho$, S=3/2, F-wave — $(\Gamma_1\Gamma_8)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
$+0.11\pm0.06$	MANLEY	92	IPWA	$\pi N \to \pi N$ & $N\pi\pi$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $p\gamma \to N(2000) \to \Lambda K$ — $(\Gamma_9\Gamma_3)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
0.0022	DEANS	72	MPWA	$\gamma p \to \Lambda K$ (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	+Lovelace	(LUND, RUTG) IJP
DEANS	72	PR D6 1906	+Jacobs, Lyons, Montgomery	(SFLA) IJP