

$N(2000) F_{15}$

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

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

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
≈ 2000 OUR ESTIMATE			
1903 \pm 87	MANLEY	92	IPWA $\pi N \rightarrow \pi N$ & $N\pi\pi$
1882 \pm 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

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
490 \pm 310	MANLEY	92	IPWA $\pi N \rightarrow \pi N$ & $N\pi\pi$
95 \pm 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

$\Gamma(N\pi)/\Gamma_{\text{total}}$				Γ_1/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.08 ± 0.05	MANLEY	92	IPWA	$\pi N \rightarrow \pi N \text{ \& } N\pi\pi$
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 $N\pi \rightarrow N(2000) \rightarrow N\eta$				$(\Gamma_1\Gamma_2)^{1/2}/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
+0.03	BAKER	79	DPWA	$\pi^- p \rightarrow n\eta$
$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow N(2000) \rightarrow \Lambda K$				$(\Gamma_1\Gamma_3)^{1/2}/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
not seen	SAXON	80	DPWA	$\pi^- p \rightarrow \Lambda K^0$
$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow N(2000) \rightarrow \Sigma K$				$(\Gamma_1\Gamma_4)^{1/2}/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
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 $N\pi \rightarrow N(2000) \rightarrow \Delta(1232)\pi$, <i>P</i>-wave				$(\Gamma_1\Gamma_6)^{1/2}/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
$+0.10 \pm 0.06$	MANLEY	92	IPWA	$\pi N \rightarrow \pi N \text{ \& } N\pi\pi$
$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow N(2000) \rightarrow N\rho$, <i>S=3/2</i>, <i>P</i>-wave				$(\Gamma_1\Gamma_7)^{1/2}/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
-0.22 ± 0.08	MANLEY	92	IPWA	$\pi N \rightarrow \pi N \text{ \& } N\pi\pi$
$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow N(2000) \rightarrow N\rho$, <i>S=3/2</i>, <i>F</i>-wave				$(\Gamma_1\Gamma_8)^{1/2}/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
$+0.11 \pm 0.06$	MANLEY	92	IPWA	$\pi N \rightarrow \pi N \text{ \& } N\pi\pi$
$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $p\gamma \rightarrow N(2000) \rightarrow \Lambda K$				$(\Gamma_9\Gamma_3)^{1/2}/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
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
