

$$N(2100) \ P_{11}$$

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

OMITTED FROM SUMMARY TABLE

N(2100) BREIT-WIGNER MASS				
VALUE (MeV)	DOCUMENT ID	TECN	COMMENT	
≈ 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	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				
VALUE (MeV)	DOCUMENT ID	TECN	COMMENT	
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	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				
VALUE (MeV)	DOCUMENT ID	TECN	COMMENT	
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	Multichannel	
not seen	ARNDT	91	DPWA	$\pi N \rightarrow \pi N$ Soln SM90
−2×IMAGINARY PART				
VALUE (MeV)	DOCUMENT ID	TECN	COMMENT	
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	Multichannel	
not seen	ARNDT	91	DPWA	$\pi N \rightarrow \pi N$ Soln SM90

N(2100) ELASTIC POLE RESIDUE				
MODULUS r				
VALUE (MeV)	DOCUMENT ID	TECN	COMMENT	
14±7	CUTKOSKY	80	IPWA	$\pi N \rightarrow \pi N$

PHASE θ

VALUE (°)	DOCUMENT ID	TECN	COMMENT
35±25	CUTKOSKY	80	IPWA $\pi N \rightarrow \pi N$

N(2100) DECAY MODES

Mode
Γ_1 $N\pi$
Γ_2 $N\eta$
Γ_3 $N\pi\pi$
Γ_4 $\Delta(1232)\pi$, P-wave

N(2100) BRANCHING RATIOS

$\Gamma(N\pi)/\Gamma_{\text{total}}$				Γ_1/Γ
VALUE	DOCUMENT ID	TECN	COMMENT	
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	Multichannel	
0.11±0.07	BATINIC	95	DPWA $\pi N \rightarrow N\pi$, $N\eta$	

$\Gamma(N\eta)/\Gamma_{\text{total}}$				Γ_2/Γ
VALUE	DOCUMENT ID	TECN	COMMENT	
0.86±0.07	BATINIC	95	DPWA $\pi N \rightarrow N\pi$, $N\eta$	

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow N(2100) \rightarrow \Delta(1232)\pi$, P-wave				$(\Gamma_1\Gamma_4)^{1/2}/\Gamma$
VALUE	DOCUMENT ID	TECN	COMMENT	
−0.19±0.08	MANLEY	92	IPWA $\pi N \rightarrow \pi N$ & $N\pi\pi$	

N(2100) REFERENCES

VRANA	00	PRPL 328 181	T.P. Vrana, S.A. Dytman,, T.-S.H. Lee	
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