$N(2100)$ 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	$\pi N \to \pi N$ & $N\pi\pi$
2125 ± 75	CUTKOSKY	80	IPWA	$\pi N \to \pi N$
2050 ± 20	HOEHLER	79	IPWA	$\pi N \to \pi N$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1986 \pm 26^{+10}_{-30}$	PLOETZKE	98	SPEC	$\gamma p \to p\eta'(958)$
2203 ± 70	BATINIC	95	DPWA	$\pi N \to N\pi$, $N\eta$

$N(2100)$ BREIT-WIGNER WIDTH

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
113 ± 44	MANLEY	92	IPWA	$\pi N \to \pi N$ & $N\pi\pi$
260 ± 100	CUTKOSKY	80	IPWA	$\pi N \to \pi N$
200 ± 30	HOEHLER	79	IPWA	$\pi N \to \pi N$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$296 \pm 100^{+60}_{-10}$	PLOETZKE	98	SPEC	$\gamma p \to p\eta'(958)$
418 ± 171	BATINIC	95	DPWA	$\pi N \to N\pi$, $N\eta$

$N(2100)$ POLE POSITION

REAL PART

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
2120 ± 40	CUTKOSKY	80	IPWA	$\pi N \to \pi N$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
not seen	ARNDT	91	DPWA	$\pi N \to \pi N$ Soln SM90

−2×IMAGINARY PART

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
240 ± 80	CUTKOSKY	80	IPWA	$\pi N \to \pi N$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
not seen	ARNDT	91	DPWA	$\pi N \to \pi N$ Soln SM90

$N(2100)$ ELASTIC POLE RESIDUE

MODULUS $|r|$

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
14 ± 7	CUTKOSKY	80	IPWA	$\pi N \to \pi N$

PHASE θ

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

$N(2100)$ 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

$\Gamma(N\pi)/\Gamma_{total}$ — Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.15 ± 0.06	MANLEY	92	IPWA	$\pi N \to \pi N$ & $N\pi\pi$
0.12 ± 0.03	CUTKOSKY	80	IPWA	$\pi N \to \pi N$
0.10 ± 0.04	HOEHLER	79	IPWA	$\pi N \to \pi N$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.11 ± 0.07	BATINIC	95	DPWA	$\pi N \to N\pi$, $N\eta$

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

VALUE	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.86 ± 0.07	BATINIC	95	DPWA	$\pi N \to N\pi$, $N\eta$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\pi \to N(2100) \to \Delta(1232)\pi$, P-wave — $(\Gamma_1\Gamma_4)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
−0.19 ± 0.08	MANLEY	92	IPWA	$\pi N \to \pi N$ & $N\pi\pi$

$N(2100)$ REFERENCES

PLOETZKE	98	PL B444 555	R. Ploetzke et al.	(Bonn SAPHIR Collab.)
BATINIC	95	PR C51 2310	M. Batinic et al.	(BOSK, UCLA)
Also	98	PR C57 1004 (erratum)	M. Batinic et al.	
MANLEY	92	PR D45 4002	D.M. Manley, E.M. Saleski	(KENT) IJP
Also	84	PR D30 904	D.M. Manley et al.	(VPI)
ARNDT	91	PR D43 2131	R.A. Arndt et al.	(VPI, TELE) IJP
CUTKOSKY	80	Toronto Conf. 19	R.E. Cutkosky et al.	(CMU, LBL) IJP
Also	79	PR D20 2839	R.E. Cutkosky et al.	(CMU, LBL)
HOEHLER	79	PDAT 12-1	G. Hohler et al.	(KARLT) IJP
Also	80	Toronto Conf. 3	R. Koch	(KARLT) IJP