

$N(2100) 1/2^+$ $I(J^P) = \frac{1}{2}(\frac{1}{2}^+)$ Status: *

OMITTED FROM SUMMARY TABLE

The latest GWU analysis (ARNDT 06) finds no evidence for this resonance.

 $N(2100)$ BREIT-WIGNER MASS

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
≈ 2100 OUR ESTIMATE			
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. • • •			
2157 ± 42	BATINIC 10	DPWA	$\pi N \rightarrow N\pi, N\eta$
2068 ± 3^{+15}_{-40}	ABLIKIM 06K	BES2	$J/\psi \rightarrow (p\pi^-)\bar{n}$
2084 ± 93	VRANA 00	DPWA	Multichannel
1986 ± 26^{+10}_{-30}	PLOETZKE 98	SPEC	$\gamma p \rightarrow p\eta'(958)$

 $N(2100)$ BREIT-WIGNER WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
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. • • •			
355 ± 88	BATINIC 10	DPWA	$\pi N \rightarrow N\pi, N\eta$
165 ± 14 ± 40	ABLIKIM 06K	BES2	$J/\psi \rightarrow (p\pi^-)\bar{n}$
1077 ± 643	VRANA 00	DPWA	Multichannel
296 ± 100^{+60}_{-10}	PLOETZKE 98	SPEC	$\gamma p \rightarrow p\eta'(958)$

 $N(2100)$ POLE POSITION**REAL PART**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
2120 ± 40	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
2120 ± 47	BATINIC 10	DPWA	$\pi N \rightarrow N\pi, N\eta$
1810	VRANA 00	DPWA	Multichannel
not seen	ARNDT 91	DPWA	$\pi N \rightarrow \pi N$ Soln SM90

−2×IMAGINARY PART

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
240 ± 80	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
346 ± 80	BATINIC 10	DPWA	$\pi N \rightarrow N\pi, N\eta$
622	VRANA 00	DPWA	Multichannel
not seen	ARNDT 91	DPWA	$\pi N \rightarrow \pi N$ Soln SM90

N(2100) ELASTIC POLE RESIDUE

MODULUS $|r|$

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
14±7	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
33	BATINIC 10	DPWA	$\pi N \rightarrow N\pi, N\eta$

PHASE θ

<u>VALUE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
35±25	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
-59	BATINIC 10	DPWA	$\pi N \rightarrow N\pi, N\eta$

N(2100) DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $N\pi$	(61±60) %
Γ_2 $N\eta$	
Γ_3 ΛK	
Γ_4 $N\pi\pi$	
Γ_5 $\Delta(1232)\pi, P\text{-wave}$	
Γ_6 $N\rho, S=1/2, P\text{-wave}$	
Γ_7 $N(\pi\pi)_{S\text{-wave}}^{I=0}$	

N(2100) BRANCHING RATIOS

<u>$\Gamma(N\pi)/\Gamma_{\text{total}}$</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	Γ_1/Γ
12±3	CUTKOSKY 80	IPWA	$\pi N \rightarrow \pi N$	Γ_1/Γ
10±4	HOEHLER 79	IPWA	$\pi N \rightarrow \pi N$	
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
16±5	BATINIC 10	DPWA	$\pi N \rightarrow N\pi, N\eta$	
2±5	VRANA 00	DPWA	Multichannel	

<u>$\Gamma(N\eta)/\Gamma_{\text{total}}$</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	Γ_2/Γ
61±61	VRANA 00	DPWA	Multichannel	Γ_2/Γ
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
83±5	BATINIC 10	DPWA	$\pi N \rightarrow N\pi, N\eta$	

<u>$\Gamma(\Lambda K)/\Gamma_{\text{total}}$</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	Γ_3/Γ
21±20	VRANA 00	DPWA	Multichannel	Γ_3/Γ

$(\Gamma_i \Gamma_f)^{1/2} / \Gamma_{\text{total}}$ in $N\pi \rightarrow N(2100) \rightarrow \Delta(1232)\pi, P\text{-wave}$ $(\Gamma_1 \Gamma_5)^{1/2} / \Gamma$

$\Gamma(\Delta(1232)\pi, P\text{-wave})/\Gamma_{\text{total}}$ Γ_5/Γ

<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
2±1	VRANA	00	DPWA Multichannel

$\Gamma(N\rho, S=1/2, P\text{-wave})/\Gamma_{\text{total}}$ Γ_6/Γ

<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
4±1	VRANA	00	DPWA Multichannel

$\Gamma(N(\pi\pi)_{S\text{-wave}}^{I=0})/\Gamma_{\text{total}}$ Γ_7/Γ

<u>VALUE (%)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
10±1	VRANA	00	DPWA Multichannel

N(2100) REFERENCES

BATINIC	10	PR C82 038203	M. Batinic <i>et al.</i>	(ZAGR)
ABLIKIM	06K	PRL 97 062001	M. Ablikim <i>et al.</i>	(BES II Collab.)
ARNDT	06	PR C74 045205	R.A. Arndt <i>et al.</i>	(GWU)
VRANA	00	PRPL 328 181	T.P. Vrana, S.A. Dytman,, T.-S.H. Lee	(PITT+)
PLOETZKE	98	PL B444 555	R. Ploetzke <i>et al.</i>	(Bonn SAPHIR Collab.)
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		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		Toronto Conf. 3	R. Koch	(KARLT) IJP