$$N(1880)\ 1/2^+$$

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

OMITTED FROM SUMMARY TABLE

N(1880) POLE POSITION

REAL PART

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
1870±40	SOKHOYAN	15A	DPWA	Multichannel
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1870±40	GUTZ	14	DPWA	Multichannel
1860±35	ANISOVICH	12A	DPWA	Multichannel
1801	SHRESTHA	12A	DPWA	Multichannel

−2×IMAGINARY PART

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
220±50	SOKHOYAN	15A	DPWA	Multichannel
• • • We do not use the following data for averages, fits, limits, etc. • • •				
220±50	GUTZ	14	DPWA	Multichannel
250±70	ANISOVICH	12A	DPWA	Multichannel
383	SHRESTHA	12A	DPWA	Multichannel

N(1880) ELASTIC POLE RESIDUE

MODULUS |r|

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
6±4	SOKHOYAN	15A	DPWA	Multichannel
• • • We do not use the following data for averages, fits, limits, etc. • • •				
6±4	GUTZ	14	DPWA	Multichannel
6±4	ANISOVICH	12A	DPWA	Multichannel

PHASE θ

VALUE (°)	DOCUMENT ID		TECN	COMMENT
70±60	SOKHOYAN	15A	DPWA	Multichannel
• • • We do not use the following data for averages, fits, limits, etc. • • •				
70±60	GUTZ	14	DPWA	Multichannel
80±65	ANISOVICH	12A	DPWA	Multichannel

N(1880) INELASTIC POLE RESIDUE

The "normalized residue" is the residue divided by $\Gamma_{pole}/2$.

Normalized residue in $N\pi \to N(1880) \to N\eta$

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.11±0.07	−75 ± 55	ANISOVICH	12A	DPWA	Multichannel

Normalized residue in $N\pi \to N(1880) \to \Lambda K$

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.03±0.02	40 ± 40	ANISOVICH	12A	DPWA	Multichannel

Normalized residue in $N\pi \to N(1880) \to \Sigma K$

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.11±0.06	95 ± 40	ANISOVICH	12A	DPWA	Multichannel

Normalized residue in $N\pi \to N(1880) \to \Delta\pi$, P-wave

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.14±0.08	−150 ± 55	SOKHOYAN	15A	DPWA	Multichannel
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.20±0.08	−150 ± 50	ANISOVICH	12A	DPWA	Multichannel

Normalized residue in $N\pi \to N(1880) \to N(1535)\pi$

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.09±0.05	130 ± 60	GUTZ	14	DPWA	Multichannel

Normalized residue in $N\pi \to N(1880) \to N a_0(980)$

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.04±0.03	40 ± 65	GUTZ	14	DPWA	Multichannel

Normalized residue in $N\pi \to N(1880) \to N\sigma$

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.10±0.05	−140 ± 55	SOKHOYAN	15A	DPWA	Multichannel

$N(1880)$ BREIT-WIGNER MASS

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
1875±40	SOKHOYAN	15A	DPWA	Multichannel
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1875±40	GUTZ	14	DPWA	Multichannel
1870±35	ANISOVICH	12A	DPWA	Multichannel
1900±36	SHRESTHA	12A	DPWA	Multichannel

$N(1880)$ BREIT-WIGNER WIDTH

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
230± 50	SOKHOYAN	15A	DPWA	Multichannel
• • • We do not use the following data for averages, fits, limits, etc. • • •				
230± 50	GUTZ	14	DPWA	Multichannel
235± 65	ANISOVICH	12A	DPWA	Multichannel
485±142	SHRESTHA	12A	DPWA	Multichannel

N(1880) DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$N\pi$	3–9 %
Γ_2	$N\eta$	5–55 %
Γ_3	$N\omega$	
Γ_4	ΛK	1–3 %
Γ_5	ΣK	10–24 %
Γ_6	$N\pi\pi$	30–80 %
Γ_7	$\Delta(1232)\pi$	18–42 %
Γ_8	$N\sigma$	10–40 %
Γ_9	$N(1535)\pi$	4–12 %
Γ_{10}	$N a_0(980)$	1–5 %
Γ_{11}	$p\gamma$, helicity=1/2	seen
Γ_{12}	$n\gamma$, helicity=1/2	0.002–0.63 %

N(1880) BRANCHING RATIOS

$\Gamma(N\pi)/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE (%)	DOCUMENT ID		TECN	COMMENT
6±3	SOKHOYAN	15A	DPWA	Multichannel

• • • We do not use the following data for averages, fits, limits, etc. • • •

6±3	GUTZ	14	DPWA	Multichannel
5±3	ANISOVICH	12A	DPWA	Multichannel
15±5	SHRESTHA	12A	DPWA	Multichannel

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

VALUE (%)	DOCUMENT ID		TECN	COMMENT
25^{+30}_{-20}	ANISOVICH	12A	DPWA	Multichannel

• • • We do not use the following data for averages, fits, limits, etc. • • •

16± 7	SHRESTHA	12A	DPWA	Multichannel

$\Gamma(N\omega)/\Gamma_{\text{total}}$ Γ_3/Γ

VALUE (%)	DOCUMENT ID		TECN	COMMENT
20±8	DENISENKO	16	DPWA	Multichannel

$\Gamma(\Lambda K)/\Gamma_{\text{total}}$ Γ_4/Γ

VALUE (%)	DOCUMENT ID		TECN	COMMENT
2± 1	ANISOVICH	12A	DPWA	Multichannel

• • • We do not use the following data for averages, fits, limits, etc. • • •

32±10	SHRESTHA	12A	DPWA	Multichannel

$\Gamma(\Sigma K)/\Gamma_{\text{total}}$ Γ_5/Γ

VALUE (%)	DOCUMENT ID		TECN	COMMENT
17±7	ANISOVICH	12A	DPWA	Multichannel

$\Gamma(\Delta(1232)\pi)/\Gamma_{total}$ $\qquad$ Γ_7/Γ

VALUE (%)	DOCUMENT ID		TECN	COMMENT
30 ± 12	SOKHOYAN	15A	DPWA	Multichannel
• • • We do not use the following data for averages, fits, limits, etc. • • •				
29 ± 12	ANISOVICH	12A	DPWA	Multichannel
<2	SHRESTHA	12A	DPWA	Multichannel

$\Gamma(N\sigma)/\Gamma_{total}$ $\qquad$ Γ_8/Γ

VALUE (%)	DOCUMENT ID		TECN	COMMENT
25 ± 15	SOKHOYAN	15A	DPWA	Multichannel
• • • We do not use the following data for averages, fits, limits, etc. • • •				
8 ± 5	SHRESTHA	12A	DPWA	Multichannel

$\Gamma(N(1535)\pi)/\Gamma_{total}$ $\qquad$ Γ_9/Γ

VALUE (%)	DOCUMENT ID		TECN	COMMENT
8 ± 4	GUTZ	14	DPWA	Multichannel

$\Gamma(Na_0(980))/\Gamma_{total}$ $\qquad$ Γ_{10}/Γ

VALUE (%)	DOCUMENT ID		TECN	COMMENT
3 ± 2	GUTZ	14	DPWA	Multichannel

$N(1880)$ BREIT-WIGNER PHOTON DECAY AMPLITUDES

$N(1880) \to p\gamma$, helicity-1/2 amplitude $A_{1/2}$

VALUE $(\text{GeV}^{-1/2})$	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.021 ± 0.006	SHRESTHA	12A	DPWA	Multichannel

$N(1880) \to n\gamma$, helicity-1/2 amplitude $A_{1/2}$

VALUE $(\text{GeV}^{-1/2})$	DOCUMENT ID		TECN	COMMENT
-0.060 ± 0.050	ANISOVICH	13B	DPWA	Multichannel
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.014 ± 0.007	SHRESTHA	12A	DPWA	Multichannel

$N(1880)$ REFERENCES

DENISENKO	16	PL B755 97	I. Denisenko *et al.*	
SOKHOYAN	15A	EPJ A51 95	V. Sokhoyan *et al.*	(CBELSA/TAPS Collab.)
GUTZ	14	EPJ A50 74	E. Gutz *et al.*	(CBELSA/TAPS Collab.)
ANISOVICH	13B	EPJ A49 67	A.V. Anisovich *et al.*	
ANISOVICH	12A	EPJ A48 15	A.V. Anisovich *et al.*	(BONN, PNPI)
SHRESTHA	12A	PR C86 055203	M. Shrestha, D.M. Manley	(KSU)