$N(2090)\ S_{11}$

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

OMITTED FROM SUMMARY TABLE

Any structure in the S_{11} wave above 1800 MeV is listed here. A few early results that are now obsolete have been omitted.

$N(2090)$ BREIT-WIGNER MASS

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
≈ 2090 OUR ESTIMATE				
1928±59	MANLEY	92	IPWA	$\pi N \rightarrow \pi N$ & $N\pi\pi$
2180±80	CUTKOSKY	80	IPWA	$\pi N \rightarrow \pi N$
1880±20	HOEHLER	79	IPWA	$\pi N \rightarrow \pi N$

$N(2090)$ BREIT-WIGNER WIDTH

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
414±157	MANLEY	92	IPWA	$\pi N \rightarrow \pi N$ & $N\pi\pi$
350±100	CUTKOSKY	80	IPWA	$\pi N \rightarrow \pi N$
95± 30	HOEHLER	79	IPWA	$\pi N \rightarrow \pi N$

$N(2090)$ POLE POSITION

REAL PART

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
2150±70	CUTKOSKY	80	IPWA	$\pi N \rightarrow \pi N$
1937 or 1949	[1] LONGACRE	78	IPWA	$\pi N \rightarrow N\pi\pi$

$-2\times$IMAGINARY PART

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
350±100	CUTKOSKY	80	IPWA	$\pi N \rightarrow \pi N$
139 or 131	[1] LONGACRE	78	IPWA	$\pi N \rightarrow N\pi\pi$

$N(2090)$ ELASTIC POLE RESIDUE

MODULUS $|r|$

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
40±20	CUTKOSKY	80	IPWA	$\pi N \rightarrow \pi N$

PHASE θ

VALUE (°)	*DOCUMENT ID*		*TECN*	*COMMENT*
0±90	CUTKOSKY	80	IPWA	$\pi N \rightarrow \pi N$

$N(2090)$ DECAY MODES

	Mode
Γ_1	$N\pi$
Γ_2	ΛK
Γ_3	$N\pi\pi$

$N(2090)$ BRANCHING RATIOS

$\Gamma(N\pi)/\Gamma_{total}$ — Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.10 ± 0.10	MANLEY	92	IPWA	$\pi N \to \pi N$ & $N\pi\pi$
0.18 ± 0.08	CUTKOSKY	80	IPWA	$\pi N \to \pi N$
0.09 ± 0.05	HOEHLER	79	IPWA	$\pi N \to \pi N$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\pi \to N(2090) \to \Lambda K$ — $(\Gamma_1\Gamma_2)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
not seen	SAXON	80	DPWA	$\pi^- p \to \Lambda K^0$

$N(2090)$ FOOTNOTES

[1] LONGACRE 78 values are from a search for poles in the unitarized T-matrix. The first (second) value uses, in addition to $\pi N \to N\pi\pi$ data, elastic amplitudes from a Saclay (CERN) partial-wave analysis.

$N(2090)$ REFERENCES

MANLEY	92	PR D45 4002	+Saleski	(KENT) IJP
Also	84	PR D30 904	Manley, Arndt, Goradia, Teplitz	(VPI)
CUTKOSKY	80	Toronto Conf. 19	+Forsyth, Babcock, Kelly, Hendrick	(CMU, LBL) IJP
Also	79	PR D20 2839	Cutkosky, Forsyth, Hendrick, Kelly	(CMU, LBL)
SAXON	80	NP B162 522	+Baker, Bell, Blissett, Bloodworth+	(RHEL, BRIS) IJP
HOEHLER	79	PDAT 12-1	+Kaiser, Koch, Pietarinen	(KARLT) IJP
Also	80	Toronto Conf. 3	Koch	(KARLT) IJP
LONGACRE	78	PR D17 1795	+Lasinski, Rosenfeld, Smadja+	(LBL, SLAC)