

N(2090) S₁₁

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

OMITTED FROM SUMMARY TABLE

Any structure in the S₁₁ wave above 1800 MeV is listed here. A few early results that are now obsolete have been omitted.

N(2090) BREIT-WIGNER MASS

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
≈ 2090 OUR ESTIMATE			
1928±59	MANLEY	92 IPWA	π N → π N & N π π
2180±80	CUTKOSKY	80 IPWA	π N → π N
1880±20	HOEHLER	79 IPWA	π N → π N

N(2090) BREIT-WIGNER WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
414±157	MANLEY	92 IPWA	π N → π N & N π π
350±100	CUTKOSKY	80 IPWA	π N → π N
95± 30	HOEHLER	79 IPWA	π N → π N

N(2090) POLE POSITION

REAL PART

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
2150±70	CUTKOSKY	80 IPWA	π N → π N
1937 or 1949	¹ LONGACRE	78 IPWA	π N → N π π

− 2×IMAGINARY PART

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
350±100	CUTKOSKY	80 IPWA	π N → π N
139 or 131	¹ LONGACRE	78 IPWA	π N → N π π

N(2090) ELASTIC POLE RESIDUE

MODULUS |r|

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
40±20	CUTKOSKY	80 IPWA	π N → π N

PHASE θ

<u>VALUE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0±90	CUTKOSKY	80 IPWA	π N → π N

N(2090) DECAY MODES

Mode
$\Gamma_1 \quad N\pi$
$\Gamma_2 \quad \Lambda K$
$\Gamma_3 \quad N\pi\pi$

N(2090) BRANCHING RATIOS

$\Gamma(N\pi)/\Gamma_{\text{total}}$	DOCUMENT ID	TECN	COMMENT	Γ_1/Γ
0.10 ± 0.10	MANLEY	92	IPWA $\pi N \rightarrow \pi N \text{ \& } N\pi\pi$	
0.18 ± 0.08	CUTKOSKY	80	IPWA $\pi N \rightarrow \pi N$	
0.09 ± 0.05	HOEHLER	79	IPWA $\pi N \rightarrow \pi N$	

$(\Gamma_i \Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow N(2090) \rightarrow \Lambda K$	DOCUMENT ID	TECN	COMMENT	$(\Gamma_1 \Gamma_2)^{1/2}/\Gamma$
not seen	SAXON	80	DPWA $\pi^- p \rightarrow \Lambda K^0$	

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 $\pi N \rightarrow N\pi\pi$ 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)