

$\Sigma(2080) 3/2^+$ $I(J^P) = 1(\frac{3}{2}^+)$ Status: *

OMITTED FROM SUMMARY TABLE

Suggested by some but not all partial-wave analyses across this region.

 $\Sigma(2080)$ MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
2060 to 2120 (\approx 2090) OUR ESTIMATE			
2091 \pm 7	¹ CORDEN	76	DPWA $K^- n \rightarrow \Lambda \pi^-$
2070 to 2120	DEBELLEFON	76	IPWA $K^- p \rightarrow \Lambda \pi^0$
2120 \pm 40	BAILLON	75	IPWA $\bar{K} N \rightarrow \Lambda \pi$ (sol. 1)
2140 \pm 40	BAILLON	75	IPWA $\bar{K} N \rightarrow \Lambda \pi$ (sol. 2)
2082 \pm 4	COX	70	DPWA See CORDEN 76
2070 \pm 30	LITCHFIELD	70	DPWA $K^- N \rightarrow \Lambda \pi$

 $\Sigma(2080)$ WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
100 to 240 (\approx 170) OUR ESTIMATE			
186 \pm 48	¹ CORDEN	76	DPWA $K^- n \rightarrow \Lambda \pi^-$
100	DEBELLEFON	76	IPWA $K^- p \rightarrow \Lambda \pi^0$
240 \pm 50	BAILLON	75	IPWA $\bar{K} N \rightarrow \Lambda \pi$ (sol. 1)
200 \pm 50	BAILLON	75	IPWA $\bar{K} N \rightarrow \Lambda \pi$ (sol. 2)
87 \pm 20	COX	70	DPWA See CORDEN 76
250 \pm 40	LITCHFIELD	70	DPWA $K^- N \rightarrow \Lambda \pi$

 $\Sigma(2080)$ DECAY MODES

Mode
Γ_1 $N \bar{K}$
Γ_2 $\Lambda \pi$

 $\Sigma(2080)$ BRANCHING RATIOSSee "Sign conventions for resonance couplings" in the Note on Λ and Σ Resonances.

$(\Gamma_i \Gamma_f)^{1/2} / \Gamma_{\text{total}}$ in $N \bar{K} \rightarrow \Sigma(2080) \rightarrow \Lambda \pi$	$(\Gamma_1 \Gamma_2)^{1/2} / \Gamma$		
VALUE	DOCUMENT ID	TECN	COMMENT
-0.10 \pm 0.03	¹ CORDEN	76	DPWA $K^- n \rightarrow \Lambda \pi^-$
-0.10	DEBELLEFON	76	IPWA $K^- p \rightarrow \Lambda \pi^0$
-0.13 \pm 0.04	BAILLON	75	IPWA $\bar{K} N \rightarrow \Lambda \pi$ (sol. 1 and 2)
-0.16 \pm 0.03	COX	70	DPWA See CORDEN 76
-0.09 \pm 0.03	LITCHFIELD	70	DPWA $K^- N \rightarrow \Lambda \pi$

$\Sigma(2080)$ FOOTNOTES

¹ Preferred solution 3; see CORDEN 76 for other possibilities, including a D_{15} at this mass.

$\Sigma(2080)$ REFERENCES

CORDEN	76	NP B104 382	M.J. Corden <i>et al.</i>	(BIRM) IJP
DEBELLEFON	76	NP B109 129	A. de Bellefon, A. Berthon	(CDEF) IJP
	Also	NP B90 1	A. de Bellefon <i>et al.</i>	(CDEF, SACL) IJP
BAILLON	75	NP B94 39	P.H. Baillon, P.J. Litchfield	(CERN, RHEL) IJP
COX	70	NP B19 61	G.F. Cox <i>et al.</i>	(BIRM, EDIN, GLAS, LOIC) IJP
LITCHFIELD	70	NP B22 269	P.J. Litchfield	(RHEL) IJP
