

$$\Sigma(2080) \ 3/2^+$$

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

OMITTED FROM SUMMARY TABLE

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

NODE=B088

NODE=B088

NODE=B088M

NODE=B088M

→ UNCHECKED ←

OCCUR=2

NODE=B088W

NODE=B088W

→ UNCHECKED ←

OCCUR=2

NODE=B088215;NODE=B088

DESIG=1

DESIG=2

NODE=B088220

NODE=B088220

NODE=B088R1
NODE=B088R1

NODE=B088

NODE=B088;LINKAGE=D

NODE=B088

REFID=32325
REFID=32158
REFID=32425
REFID=32089
REFID=32312
REFID=32293

$\Sigma(2080)$ 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
$\Gamma_1 \quad N\bar{K}$
$\Gamma_2 \quad \Lambda \pi$

$\Sigma(2080)$ BRANCHING RATIOS

See "Sign conventions for resonance couplings" in the Note on Λ and Σ Resonances.

$(\Gamma_i \Gamma_f)^{1/2} / \Gamma_{\text{total}}$ in $N\bar{K} \rightarrow \Sigma(2080) \rightarrow \Lambda \pi$	DOCUMENT ID	TECN	COMMENT	$(\Gamma_1 \Gamma_2)^{1/2} / \Gamma$
VALUE				
-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