

$\Sigma(2080) 3/2^+$  $I(J^P) = 1(\frac{3}{2}^+)$  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
<b>2060 to 2120 (<math>\approx</math> 2090) OUR ESTIMATE</b>			
2091 $\pm$ 7	<sup>1</sup> 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
<b>100 to 240 (<math>\approx</math> 170) OUR ESTIMATE</b>			
186 $\pm$ 48	<sup>1</sup> 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
$\Gamma_1$ $N\bar{K}$
$\Gamma_2$ $\Lambda\pi$

 **$\Sigma(2080)$  BRANCHING RATIOS**See "Sign conventions for resonance couplings" in the Note on  $\Lambda$  and  $\Sigma$  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	<sup>1</sup> 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

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

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## $\Sigma(2080)$ 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

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