

$\Sigma(2080) P_{13}$

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

OMITTED FROM SUMMARY TABLE

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

**$\Sigma(2080)$  MASS**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b><math>\approx 2080</math> OUR ESTIMATE</b>			
2091 ± 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 ± 40	BAILLON	75	IPWA $\bar{K} N \rightarrow \Lambda \pi$ (sol. 1)
2140 ± 40	BAILLON	75	IPWA $\bar{K} N \rightarrow \Lambda \pi$ (sol. 2)
2082 ± 4	COX	70	DPWA See CORDEN 76
2070 ± 30	LITCHFIELD	70	DPWA $K^- N \rightarrow \Lambda \pi$

**$\Sigma(2080)$  WIDTH**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
186 ± 48	<sup>1</sup> CORDEN	76	DPWA $K^- n \rightarrow \Lambda \pi^-$
100	DEBELLEFON	76	IPWA $K^- p \rightarrow \Lambda \pi^0$
240 ± 50	BAILLON	75	IPWA $\bar{K} N \rightarrow \Lambda \pi$ (sol. 1)
200 ± 50	BAILLON	75	IPWA $\bar{K} N \rightarrow \Lambda \pi$ (sol. 2)
87 ± 20	COX	70	DPWA See CORDEN 76
250 ± 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.

<u><math>(\Gamma_i \Gamma_f)^{1/2} / \Gamma_{\text{total}}</math> in <math>N\bar{K} \rightarrow \Sigma(2080) \rightarrow \Lambda\pi</math></u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	<u><math>(\Gamma_1 \Gamma_2)^{1/2} / \Gamma</math></u>
-0.10 ± 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 ± 0.04	BAILLON	75	IPWA $\bar{K} N \rightarrow \Lambda \pi$ (sol. 1 and 2)	
-0.16 ± 0.03	COX	70	DPWA See CORDEN 76	
-0.09 ± 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	+Cox, Dartnell, Kenyon, O'Neale+	(BIRM) IJP
DEBELLEFON	76	NP B109 129	De Bellefon, Berthon	(CDEF) IJP
Also	75	NP B90 1	De Bellefon, Berthon, Brunet+	(CDEF, SACL) IJP
BAILLON	75	NP B94 39	+Litchfield	(CERN, RHEL) IJP
COX	70	NP B19 61	+Islam, Colley+	(BIRM, EDIN, GLAS, LOIC) IJP
LITCHFIELD	70	NP B22 269		(RHEL) IJP

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