

$\Sigma(1780) 3/2^+$  $I(J^P) = 1(\frac{3}{2}^+)$  Status: \*OMITTED FROM SUMMARY TABLE  
was  $\Sigma(1730)$  **$\Sigma(1780)$  MASS**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>1730 to 1830 (<math>\approx 1780</math>) OUR ESTIMATE</b>			
1727 $\pm$ 27	ZHANG	13A	DPWA Multichannel
1798 or 1802	<sup>1</sup> MARTIN	77	DPWA $\bar{K}N$ multichannel
1720 $\pm$ 30	<sup>2</sup> BAILLON	75	IPWA $\bar{K}N \rightarrow \Lambda\pi$
1840 $\pm$ 10	LANGBEIN	72	IPWA $\bar{K}N$ multichannel
<sup>1</sup> The two MARTIN 77 values are from a T-matrix pole and from a Breit-Wigner fit.			
<sup>2</sup> From solution 1 of BAILLON 75; not present in solution 2.			

 **$\Sigma(1780)$  WIDTH**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>100 to 300 (<math>\approx 200</math>) OUR ESTIMATE</b>			
276 $\pm$ 87	ZHANG	13A	DPWA Multichannel
93 or 93	<sup>1</sup> MARTIN	77	DPWA $\bar{K}N$ multichannel
120 $\pm$ 30	<sup>2</sup> BAILLON	75	IPWA $\bar{K}N \rightarrow \Lambda\pi$
120 $\pm$ 10	LANGBEIN	72	IPWA $\bar{K}N$ multichannel
<sup>1</sup> The two MARTIN 77 values are from a T-matrix pole and from a Breit-Wigner fit.			
<sup>2</sup> From solution 1 of BAILLON 75; not present in solution 2.			

 **$\Sigma(1780)$  DECAY MODES**

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $N\bar{K}$	( 2.0 $\pm$ 1.0 ) %
$\Gamma_2$ $\Lambda\pi$	( 70 $\pm$ 17 ) %
$\Gamma_3$ $\Sigma\pi$	( 12 $\pm$ 6 ) %

 **$\Sigma(1780)$  BRANCHING RATIOS**

<b><math>\Gamma(N\bar{K})/\Gamma_{\text{total}}</math></b>				<b><math>\Gamma_1/\Gamma</math></b>
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.02 <math>\pm</math> 0.01</b>	ZHANG	13A	DPWA Multichannel	
<b><math>\Gamma(\Lambda\pi)/\Gamma_{\text{total}}</math></b>				<b><math>\Gamma_2/\Gamma</math></b>
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.70 <math>\pm</math> 0.17</b>	ZHANG	13A	DPWA Multichannel	
<b><math>\Gamma(\Sigma\pi)/\Gamma_{\text{total}}</math></b>				<b><math>\Gamma_3/\Gamma</math></b>
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.12 <math>\pm</math> 0.06</b>	ZHANG	13A	DPWA Multichannel	

## $\Sigma(1780)$ REFERENCES

ZHANG	13A	PR C88 035205	H. Zhang <i>et al.</i>	(KSU)
MARTIN	77	NP B127 349	B.R. Martin, M.K. Pidcock, R.G. Moorhouse	(LOUC+)
BAILLON	75	NP B94 39	P.H. Baillon, P.J. Litchfield	(CERN, RHEL)
LANGBEIN	72	NP B47 477	W. Langbein, F. Wagner	(MPIM)

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