

$$\Sigma(2230) \ 3/2^+$$

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

OMITTED FROM SUMMARY TABLE

 **$\Sigma(2230)$  POLE POSITION****REAL PART**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>2234 ± 25</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**−2×IMAGINARY PART**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>340 ± 45</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

 **$\Sigma(2230)$  POLE RESIDUES****Normalized residue in  $N\bar{K} \rightarrow \Sigma(2230) \rightarrow N\bar{K}$** 

<u>MODULUS</u>	<u>PHASE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.07 ± 0.02</b>	<b>25 ± 15</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**Normalized residue in  $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Sigma\pi$** 

<u>MODULUS</u>	<u>PHASE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.03 ± 0.02</b>	<b>180 ± 25</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**Normalized residue is  $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Lambda\pi$** 

<u>MODULUS</u>	<u>PHASE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.11 ± 0.05</b>	<b>−16 ± 10</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**Normalized residue in  $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Xi K$** 

<u>MODULUS</u>	<u>PHASE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.04 ± 0.02</b>	<b>155 ± 20</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**Normalized residue in  $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Lambda(1520)\pi, S\text{-wave}$** 

<u>MODULUS</u>	<u>PHASE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.12 ± 0.05</b>	<b>−80 ± 25</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**Normalized residue in  $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Lambda(1520)\pi, D\text{-wave}$** 

<u>MODULUS</u>	<u>PHASE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.03 ± 0.02</b>	<b>160 ± 30</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**Normalized residue in  $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Sigma(1385)\pi, P\text{-wave}$** 

<u>MODULUS</u>	<u>PHASE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.05 ± 0.02</b>	<b>60 ± 25</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**Normalized residue in  $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Sigma(1385)\pi, F\text{-wave}$** 

<u>MODULUS</u>	<u>PHASE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.05 ± 0.03</b>	<b>−70 ± 20</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**Normalized residue in  $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Delta\bar{K}$ ,  $P$ -wave**

<u>MODULUS</u>	<u>PHASE (<math>^\circ</math>)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.11±0.04</b>	<b>60 ± 15</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**Normalized residue in  $N\bar{K} \rightarrow \Sigma(2230) \rightarrow \Delta\bar{K}$ ,  $F$ -wave**

<u>MODULUS</u>	<u>PHASE (<math>^\circ</math>)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.07±0.03</b>	<b>90 ± 25</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**Normalized residue in  $N\bar{K} \rightarrow \Sigma(2230) \rightarrow N\bar{K}^*(892)$ ,  $S=1/2$ ,  $P$ -wave**

<u>MODULUS</u>	<u>PHASE (<math>^\circ</math>)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.08±0.04</b>	<b>40 ± 45</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**Normalized residue in  $N\bar{K} \rightarrow \Sigma(2230) \rightarrow N\bar{K}^*(892)$ ,  $S=3/2$ ,  $P$ -wave**

<u>MODULUS</u>	<u>PHASE (<math>^\circ</math>)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.14±0.03</b>	<b>-40 ± 45</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**Normalized residue in  $N\bar{K} \rightarrow \Sigma(2230) \rightarrow N\bar{K}^*(892)$ ,  $S=3/2$ ,  $F$ -wave**

<u>MODULUS</u>	<u>PHASE (<math>^\circ</math>)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.05±0.03</b>	<b>35 ± 30</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**$\Sigma(2230)$  MASS**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>2240±27</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**$\Sigma(2230)$  WIDTH**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>345±50</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

**$\Sigma(2230)$  DECAY MODES**

	<u>Mode</u>	<u>Fraction (<math>\Gamma_i/\Gamma</math>)</u>
$\Gamma_1$	$N\bar{K}$	( 6.0±2.0 ) %
$\Gamma_2$	$\Sigma\pi$	( 2.0±1.0 ) %
$\Gamma_3$	$\Lambda\pi$	(12 ±6 ) %
$\Gamma_4$	$\Xi K$	( 2.0±1.0 ) %
$\Gamma_5$	$\Lambda(1520)\pi$ , $S$ -wave	(14 ±5 ) %
$\Gamma_6$	$\Lambda(1520)\pi$ , $D$ -wave	
$\Gamma_7$	$\Sigma(1385)\pi$ , $P$ -wave	( 4 ±4 ) %
$\Gamma_8$	$\Sigma(1385)\pi$ , $F$ -wave	( 3.0±2.0 ) %
$\Gamma_9$	$\Delta\bar{K}$ , $P$ -wave	(14 ±5 ) %
$\Gamma_{10}$	$\Delta\bar{K}$ , $F$ -wave	( 8.0±2.0 ) %
$\Gamma_{11}$	$N\bar{K}^*(892)$ , $S=1/2$ , $F$ -wave	( 8.0±3.0 ) %
$\Gamma_{12}$	$N\bar{K}^*(892)$ , $S=3/2$ , $F$ -wave	(26 ±5 ) %

## $\Sigma(2230)$ BRANCHING RATIOS

$\Gamma(N\bar{K})/\Gamma_{\text{total}}$				$\Gamma_1/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.06±0.02</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Sigma\pi)/\Gamma_{\text{total}}$				$\Gamma_2/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.02±0.01</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Lambda\pi)/\Gamma_{\text{total}}$				$\Gamma_3/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.12±0.06</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Xi K)/\Gamma_{\text{total}}$				$\Gamma_4/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.02±0.01</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Lambda(1520)\pi, S\text{-wave})/\Gamma_{\text{total}}$				$\Gamma_5/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.14±0.05</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Lambda(1520)\pi, D\text{-wave})/\Gamma_{\text{total}}$				$\Gamma_6/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
• • • We do not use the following data for averages, fits, limits, etc. • • • ~ 1	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Sigma(1385)\pi, P\text{-wave})/\Gamma_{\text{total}}$				$\Gamma_7/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.04±0.04</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Sigma(1385)\pi, F\text{-wave})/\Gamma_{\text{total}}$				$\Gamma_8/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.03±0.02</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Delta\bar{K}, P\text{-wave})/\Gamma_{\text{total}}$				$\Gamma_9/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.14±0.05</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Delta\bar{K}, F\text{-wave})/\Gamma_{\text{total}}$				$\Gamma_{10}/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.08±0.02</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(N\bar{K}^*(892), S=1/2, F\text{-wave})/\Gamma_{\text{total}}$				$\Gamma_{11}/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>0.08±0.03</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	

$\Gamma(N\bar{K}^*(892), S=3/2, F\text{-wave})/\Gamma_{\text{total}}$			$\Gamma_{12}/\Gamma$
<i>VALUE</i>	<i>DOCUMENT ID</i>	<i>TECN</i>	<i>COMMENT</i>
<b>0.26±0.05</b>	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

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### $\Sigma(2230)$ REFERENCES

SARANTSEV 19 EPJ A55 180 A.V. Sarantsev *et al.* (BONN, PNPI)

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