

$\Sigma(2010) 3/2^-$ $I(J^P) = 1(3/2^-)$ Status: *

OMITTED FROM SUMMARY TABLE

 $\Sigma(2010)$ POLE POSITION**REAL PART**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
1995±12	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

-2×IMAGINARY PART

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
175±24	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

 $\Sigma(2010)$ POLE RESIDUESThe normalized residue is the residue divided by $\Gamma_{pole}/2$.**Normalized residue in $N\bar{K} \rightarrow \Sigma(2010) \rightarrow N\bar{K}$**

<u>MODULUS</u>	<u>PHASE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.07±0.03	-115 ± 25	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

Normalized residue in $N\bar{K} \rightarrow \Sigma(2010) \rightarrow \Sigma\pi$

<u>MODULUS</u>	<u>PHASE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.04±0.02	130 ± 22	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

Normalized residue in $N\bar{K} \rightarrow \Sigma(2010) \rightarrow \Lambda\pi$

<u>MODULUS</u>	<u>PHASE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.06±0.03	170 ± 25	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

Normalized residue in $N\bar{K} \rightarrow \Sigma(2010) \rightarrow \Xi K$

<u>MODULUS</u>	<u>PHASE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.04±0.02	-120 ± 45	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

Normalized residue in $N\bar{K} \rightarrow \Sigma(2010) \rightarrow \Lambda(1520)\pi, P\text{-wave}$

<u>MODULUS</u>	<u>PHASE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.03±0.02	80 ± 35	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

Normalized residue in $N\bar{K} \rightarrow \Sigma(2010) \rightarrow \Lambda(1520)\pi, F\text{-wave}$

<u>MODULUS</u>	<u>PHASE (°)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.08±0.05	150 ± 65	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

Normalized residue in $N\bar{K} \rightarrow \Sigma(2010) \rightarrow \Sigma(1385)\pi, P\text{-wave}$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.04±0.02@25±45	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

Normalized residue in $N\bar{K} \rightarrow \Sigma(2010) \rightarrow \Sigma(1385)\pi, F\text{-wave}$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.02±0.02	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

Normalized residue in $N\bar{K} \rightarrow \Sigma(2010) \rightarrow \Delta\bar{K}$, S-wave

<u>MODULUS</u>	<u>PHASE ($^\circ$)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.08 ± 0.04	0 ± 30	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

Normalized residue in $N\bar{K} \rightarrow \Sigma(2010) \rightarrow \Delta\bar{K}$, D-wave

<u>MODULUS</u>	<u>PHASE ($^\circ$)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.02 ± 0.02		SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

Normalized residue in $N\bar{K} \rightarrow \Sigma(2010) \rightarrow N\bar{K}^*(892)$, S-wave

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$0.12 \pm 0.03 @ -60 \text{ to } +60$	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

Normalized residue in $N\bar{K} \rightarrow \Sigma(2010) \rightarrow N\bar{K}^*(892)$, S=1/2, D-wave

<u>MODULUS</u>	<u>PHASE ($^\circ$)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.08 ± 0.04	55 ± 60	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

Normalized residue in $N\bar{K} \rightarrow \Sigma(2010) \rightarrow N\bar{K}^*(892)$, S=3/2, D-wave

<u>MODULUS</u>	<u>PHASE ($^\circ$)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.08 ± 0.04	15 ± 60	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

 $\Sigma(2010)$ MASS

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
2005 ± 14	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

 $\Sigma(2010)$ WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
178 ± 23	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

 $\Sigma(2010)$ DECAY MODES

	<u>Mode</u>	<u>Fraction (Γ_i/Γ)</u>
Γ_1	$N\bar{K}$	(7.0 ± 3.0) %
Γ_2	$\Lambda\pi$	(5.0 ± 2.0) %
Γ_3	$\Sigma\pi$	(3.0 ± 2.0) %
Γ_4	ΞK	(3.0 ± 2.0) %
Γ_5	$\Sigma(1385)\pi$, P-wave	(3.0 ± 2.0) %
Γ_6	$\Sigma(1385)\pi$, F-wave	(2.0 ± 2.0) %
Γ_7	$\Lambda(1520)\pi$, P-wave	(2.0 ± 2.0) %
Γ_8	$\Lambda(1520)\pi$, F-wave	(12 ± 6) %
Γ_9	$\Delta\bar{K}$, S-wave	(11 ± 5) %
Γ_{10}	$\Delta\bar{K}$, D-wave	(1.0 ± 1.0) %
Γ_{11}	$N\bar{K}^*(892)$, S=1/2, S-wave	(27 ± 7) %
Γ_{12}	$N\bar{K}^*(892)$, S=1/2, D-wave	(13 ± 6) %
Γ_{13}	$N\bar{K}^*(892)$, S=3/2, D-wave	(13 ± 6) %

$\Sigma(2010)$ BRANCHING RATIOS

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

$\Gamma(N\bar{K})/\Gamma_{\text{total}}$				Γ_1/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.07±0.03	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Lambda\pi)/\Gamma_{\text{total}}$				Γ_2/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.05±0.02	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Sigma\pi)/\Gamma_{\text{total}}$				Γ_3/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.03±0.02	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Xi K)/\Gamma_{\text{total}}$				Γ_4/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.03±0.02	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Sigma(1385)\pi, P\text{-wave})/\Gamma_{\text{total}}$				Γ_5/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.03±0.02	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Sigma(1385)\pi, F\text{-wave})/\Gamma_{\text{total}}$				Γ_6/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.02±0.02	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Lambda(1520)\pi, P\text{-wave})/\Gamma_{\text{total}}$				Γ_7/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.02±0.02	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Lambda(1520)\pi, F\text{-wave})/\Gamma_{\text{total}}$				Γ_8/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.12±0.06	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Delta\bar{K}, S\text{-wave})/\Gamma_{\text{total}}$				Γ_9/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.11±0.05	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(\Delta\bar{K}, D\text{-wave})/\Gamma_{\text{total}}$				Γ_{10}/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.01±0.01	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	
$\Gamma(N\bar{K}^*(892), S=1/2, S\text{-wave})/\Gamma_{\text{total}}$				Γ_{11}/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
0.27±0.07	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel	

$\Gamma(N\bar{K}^*(892), S=1/2, D\text{-wave})/\Gamma_{\text{total}}$ Γ_{12}/Γ

<i>VALUE</i>	<i>DOCUMENT ID</i>	<i>TECN</i>	<i>COMMENT</i>
0.13±0.06	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

$\Gamma(N\bar{K}^*(892), S=3/2, D\text{-wave})/\Gamma_{\text{total}}$ Γ_{13}/Γ

<i>VALUE</i>	<i>DOCUMENT ID</i>	<i>TECN</i>	<i>COMMENT</i>
0.13±0.06	SARANTSEV 19	DPWA	$\bar{K}N$ multichannel

Σ(2010) REFERENCES

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