NODE=B002

$\Sigma(2010)\ 3/2^-$

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

OMITTED FROM SUMMARY TABLE
was $\Sigma(2000)$

$\Sigma(2010)$ POLE POSITION

NODE=B002225

REAL PART

NODE=B002RE
NODE=B002RE

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
1995±12	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

−2×IMAGINARY PART

NODE=B002IM
NODE=B002IM

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
175±24	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

$\Sigma(2010)$ POLE RESIDUES

NODE=B002250

The normalized residue is the residue divided by $\Gamma_{pole}/2$.

NODE=B002250

Normalized residue in $N\overline{K} \to \Sigma(2010) \to N\overline{K}$

NODE=B002A03
NODE=B002A03

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.07±0.03	**−115 ± 25**	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

OCCUR=4

Normalized residue in $N\overline{K} \to \Sigma(2010) \to \Sigma\pi$

NODE=B002A04
NODE=B002A04

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.04±0.02	**130 ± 22**	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

OCCUR=3

Normalized residue in $N\overline{K} \to \Sigma(2010) \to \Lambda\pi$

NODE=B002A05
NODE=B002A05

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.06±0.03	**170 ± 25**	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

OCCUR=2

Normalized residue in $N\overline{K} \to \Sigma(2010) \to \Xi K$

NODE=B002A06
NODE=B002A06

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.04±0.02	**−120 ± 45**	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

OCCUR=2

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

NODE=B002A10
NODE=B002A10

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.03±0.02	**80 ± 35**	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

OCCUR=2

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

NODE=B002A11
NODE=B002A11

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.08±0.05	**150 ± 65**	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

OCCUR=2

Normalized residue in $N\overline{K} \to \Sigma(2010) \to \Sigma(1385)\pi$, P-wave

NODE=B002A14
NODE=B002A14

VALUE	DOCUMENT ID		TECN	COMMENT
0.04+-0.02@25+-45	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

Normalized residue in $N\overline{K} \to \Sigma(2010) \to \Sigma(1385)\pi$, F-wave

NODE=B002A15
NODE=B002A15

VALUE	DOCUMENT ID		TECN	COMMENT
0.02±0.02	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

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

NODE=B002A08
NODE=B002A08

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.08±0.04	**0 ± 30**	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

OCCUR=2

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

NODE=B002A09
NODE=B002A09

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.02±0.02		SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

OCCUR=2

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

NODE=B002A16
NODE=B002A16

VALUE	DOCUMENT ID		TECN	COMMENT
0.12+-0.03@-60+-60	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

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

NODE=B002A01
NODE=B002A01

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT
0.08±0.04	**55 ± 60**	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

OCCUR=2

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

NODE=B002A00
NODE=B002A00

MODULUS	PHASE (°)	DOCUMENT ID		TECN	COMMENT	
0.08±0.04	**15 ± 60**	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel	OCCUR=2

$\Sigma(2010)$ MASS

NODE=B002M

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT	
2005±14	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel	OCCUR=2

$\Sigma(2010)$ WIDTH

NODE=B002W

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT	
178±23	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel	OCCUR=2

$\Sigma(2010)$ DECAY MODES

NODE=B002215;NODE=B002

	Mode	Fraction (Γ_i/Γ)	
Γ_1	$N\overline{K}$	(7.0±3.0) %	DESIG=1
Γ_2	$\Lambda\pi$	(5.0±2.0) %	DESIG=2
Γ_3	$\Sigma\pi$	(3.0±2.0) %	DESIG=3
Γ_4	ΞK	(3.0±2.0) %	DESIG=22
Γ_5	$\Sigma(1385)\pi$, P-wave	(3.0±2.0) %	DESIG=32
Γ_6	$\Sigma(1385)\pi$, F-wave	(2.0±2.0) %	DESIG=33
Γ_7	$\Lambda(1520)\pi$, P-wave	(2.0±2.0) %	DESIG=28
Γ_8	$\Lambda(1520)\pi$, F-wave	(12 ±6) %	DESIG=29
Γ_9	$\Delta\overline{K}$, S-wave	(11 ±5) %	DESIG=34
Γ_{10}	$\Delta\overline{K}$, D-wave	(1.0±1.0) %	DESIG=35
Γ_{11}	$N\overline{K}^*(892)$, S=1/2, S-wave	(27 ±7) %	DESIG=5
Γ_{12}	$N\overline{K}^*(892)$, S=1/2 , D-wave	(13 ±6) %	DESIG=25
Γ_{13}	$N\overline{K}^*(892)$, S=3/2, D-wave	(13 ±6) %	DESIG=6

$\Sigma(2010)$ BRANCHING RATIOS

NODE=B002220

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

NODE=B002220

$\Gamma(N\overline{K})/\Gamma_{total}$ — Γ_1/Γ

NODE=B002R1
NODE=B002R1

VALUE	DOCUMENT ID		TECN	COMMENT	
0.07±0.03	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel	OCCUR=2

$\Gamma(\Lambda\pi)/\Gamma_{total}$ — Γ_2/Γ

NODE=B002R13
NODE=B002R13

VALUE	DOCUMENT ID		TECN	COMMENT
0.05±0.02	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

$\Gamma(\Sigma\pi)/\Gamma_{total}$ — Γ_3/Γ

NODE=B002R14
NODE=B002R14

VALUE	DOCUMENT ID		TECN	COMMENT
0.03±0.02	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

$\Gamma(\Xi K)/\Gamma_{total}$ — Γ_4/Γ

NODE=B002R16
NODE=B002R16

VALUE	DOCUMENT ID		TECN	COMMENT
0.03±0.02	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

$\Gamma(\Sigma(1385)\pi, P\text{-wave})/\Gamma_{total}$ — Γ_5/Γ

NODE=B002R27
NODE=B002R27

VALUE	DOCUMENT ID		TECN	COMMENT	
0.03±0.02	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel	OCCUR=2

$\Gamma(\Sigma(1385)\pi, F\text{-wave})/\Gamma_{total}$ — Γ_6/Γ

NODE=B002R28
NODE=B002R28

VALUE	DOCUMENT ID		TECN	COMMENT	
0.02±0.02	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel	OCCUR=2

$\Gamma(\Lambda(1520)\pi, P\text{-wave})/\Gamma_{total}$ — Γ_7/Γ

NODE=B002R24
NODE=B002R24

VALUE	DOCUMENT ID		TECN	COMMENT
0.02±0.02	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

$\Gamma(\Lambda(1520)\pi, F\text{-wave})/\Gamma_{total}$ — Γ_8/Γ

NODE=B002R25
NODE=B002R25

VALUE	DOCUMENT ID		TECN	COMMENT
0.12±0.06	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

$\Gamma(\Delta\overline{K}, S\text{-wave})/\Gamma_{total}$ — Γ_9/Γ

NODE=B002R29
NODE=B002R29

VALUE	DOCUMENT ID		TECN	COMMENT
0.11±0.05	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

$\Gamma(\Delta\overline{K}, D\text{-wave})/\Gamma_{total}$ — Γ_{10}/Γ

NODE=B002R30
NODE=B002R30

VALUE	DOCUMENT ID		TECN	COMMENT
0.01±0.01	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

$\Gamma(N\overline{K}^*(892), S=1/2, S\text{-wave})/\Gamma_{total}$ — Γ_{11}/Γ

NODE=B002R20
NODE=B002R20

VALUE	DOCUMENT ID		TECN	COMMENT
0.27±0.07	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

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

NODE=B002R26
NODE=B002R26

VALUE	DOCUMENT ID		TECN	COMMENT
0.13±0.06	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

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

NODE=B002R21
NODE=B002R21

VALUE	DOCUMENT ID		TECN	COMMENT
0.13±0.06	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel

$\Sigma(2010)$ REFERENCES

NODE=B002

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

REFID=59986