

$\Sigma(1940) \ 3/2^+$

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

OMITTED FROM SUMMARY TABLE

$\Sigma(1940)$ MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
1920 to 1960 (≈ 1940) OUR ESTIMATE			
1941 ± 18	ZHANG	13A	DPWA $\overline{K} N$ multichannel
1925 ± 200	VANHORN	75	DPWA $K^- p \rightarrow \Lambda \pi^0$

$\Sigma(1940)$ WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
100 to 400 (≈ 250) OUR ESTIMATE			
400 ± 49	ZHANG	13A	DPWA $\overline{K} N$ multichannel
65^{+50}_{-20}	VANHORN	75	DPWA $K^- p \rightarrow \Lambda \pi^0$

$\Sigma(1940)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \quad N \overline{K}$	$(13.0 \pm 2.0) \%$
$\Gamma_2 \quad \Sigma \pi$	$(4.0 \pm 2.0) \%$
$\Gamma_3 \quad \Sigma(1385) \pi, \text{ } P\text{-wave}$	$(22 \pm 7) \%$
$\Gamma_4 \quad \Lambda(1520) \pi, \text{ } S\text{-wave}$	$(5.0 \pm 2.0) \%$

$\Sigma(1940)$ BRANCHING RATIOS

$\Gamma(N\overline{K})/\Gamma_{\text{total}}$	Γ_1/Γ		
VALUE	DOCUMENT ID	TECN	COMMENT
0.13 ± 0.02	ZHANG	13A	DPWA $\overline{K} N$ multichannel
$\Gamma(\Sigma\pi)/\Gamma_{\text{total}}$	Γ_2/Γ		
VALUE	DOCUMENT ID	TECN	COMMENT
0.04 ± 0.02	ZHANG	13A	DPWA $\overline{K} N$ multichannel
$\Gamma(\Sigma(1385)\pi, P\text{-wave})/\Gamma_{\text{total}}$	Γ_3/Γ		
VALUE	DOCUMENT ID	TECN	COMMENT
0.22 ± 0.07	ZHANG	13A	DPWA $\overline{K} N$ multichannel
$\Gamma(\Lambda(1520)\pi, S\text{-wave})/\Gamma_{\text{total}}$	Γ_4/Γ		
VALUE	DOCUMENT ID	TECN	COMMENT
0.05 ± 0.02	ZHANG	13A	DPWA $\overline{K} N$ multichannel

$\Sigma(1940)$ REFERENCES

ZHANG	13A	PR C88 035205	H. Zhang <i>et al.</i>	(KSU)
VANHORN	75	NP B87 145	A.J. van Horn	(LBL)
