NODE=B034

$\Sigma(2070)\ 5/2^+$

$I(J^P) = 1(\frac{5}{2}^+)$ Status: ∗

OMITTED FROM SUMMARY TABLE

NODE=B034

This state suggested by BERTHON 70B finds support in GOPAL 80 with new $K^- p$ polarization and $K^- n$ angular distributions. The very broad state seen in KANE 72 is not required in the later (KANE 74) analysis of $\overline{K} N \to \Sigma\pi$.

Σ(2070) MASS

NODE=B034M

NODE=B034M

→ UNCHECKED ←

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
2020 to 2100 (≈ 2060) OUR ESTIMATE				
2051±25	GOPAL	80	DPWA	$\overline{K} N \to \overline{K} N$
2070±10	BERTHON	70B	DPWA	$K^- p \to \Sigma\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2057	KANE	72	DPWA	$K^- p \to \Sigma\pi$

Σ(2070) WIDTH

NODE=B034W

NODE=B034W

→ UNCHECKED ←

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
100 to 300 (≈ 200) OUR ESTIMATE				
300±30	GOPAL	80	DPWA	$\overline{K} N \to \overline{K} N$
140±20	BERTHON	70B	DPWA	$K^- p \to \Sigma\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
906	KANE	72	DPWA	$K^- p \to \Sigma\pi$

Σ(2070) DECAY MODES

NODE=B034215;NODE=B034

	Mode	
Γ_1	$N\overline{K}$	DESIG=1
Γ_2	$\Sigma\pi$	DESIG=2

Σ(2070) BRANCHING RATIOS

NODE=B034220

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

NODE=B034220

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

NODE=B034R2
NODE=B034R2

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
0.08±0.03	GOPAL	80	DPWA	$\overline{K} N \to \overline{K} N$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\overline{K} \to \Sigma(2070) \to \Sigma\pi$ $(\Gamma_1\Gamma_2)^{1/2}/\Gamma$

NODE=B034R1
NODE=B034R1

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
0.12 ±0.02	BERTHON	70B	DPWA	$K^- p \to \Sigma\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.104	KANE	72	DPWA	$K^- p \to \Sigma\pi$

Σ(2070) REFERENCES

NODE=B034

GOPAL	80	Toronto Conf. 159	G.P. Gopal	(RHEL) IJP	REFID=31755
KANE	74	LBL-2452	D.F. Kane	(LBL)	REFID=31759
KANE	72	PR D5 1583	D.F.J. Kane	(LBL)	REFID=31880
BERTHON	70B	NP B24 417	A. Berthon *et al.*	(CDEF, RHEL, SACL) IJP	REFID=31956