

# $\Sigma(2070) F_{15}$

$$I(J^P) = 1(\frac{5}{2}^+) \text{ Status: } *$$

**OMITTED FROM SUMMARY TABLE**

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  $\bar{K}N \rightarrow \Sigma \pi$ .

### $\Sigma(2070)$ MASS

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b><math>\approx 2070</math> OUR ESTIMATE</b>			
2051 ± 25	GOPAL	80	DPWA $\bar{K}N \rightarrow \bar{K}N$
2057	KANE	72	DPWA $K^- p \rightarrow \Sigma \pi$
2070 ± 10	BERTHON	70B	DPWA $K^- p \rightarrow \Sigma \pi$

### $\Sigma(2070)$ WIDTH

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
300 ± 30	GOPAL	80	DPWA $\bar{K}N \rightarrow \bar{K}N$
906	KANE	72	DPWA $K^- p \rightarrow \Sigma \pi$
140 ± 20	BERTHON	70B	DPWA $K^- p \rightarrow \Sigma \pi$

### $\Sigma(2070)$ DECAY MODES

Mode
$\Gamma_1 \quad N\bar{K}$
$\Gamma_2 \quad \Sigma \pi$

### $\Sigma(2070)$ BRANCHING RATIOS

See "Sign conventions for resonance couplings" in the Note on  $\Lambda$  and  $\Sigma$  Resonances.

$\Gamma(N\bar{K})/\Gamma_{\text{total}}$	$\Gamma_1/\Gamma$		
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
0.08 ± 0.03	GOPAL	80	DPWA $\bar{K}N \rightarrow \bar{K}N$
$(\Gamma_i \Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\bar{K} \rightarrow \Sigma(2070) \rightarrow \Sigma \pi$	$(\Gamma_1 \Gamma_2)^{1/2}/\Gamma$		
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
+0.104	KANE	72	DPWA $K^- p \rightarrow \Sigma \pi$
+0.12 ± 0.02	BERTHON	70B	DPWA $K^- p \rightarrow \Sigma \pi$

## $\Sigma(2070)$ REFERENCES

GOPAL	80	Toronto Conf.	159	G.P. Gopal	(RHEL) IJP
KANE	74	LBL-2452		D.F. Kane	(LBL)
KANE	72	PR D5	1583	D.F.J. Kane	(LBL)
BERTHON	70B	NP B24	417	A. Berthon <i>et al.</i>	(CDEF, RHEL, SACL) IJP

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