

$\Sigma(2070) F_{15}$  $I(J^P) = 1(\frac{5}{2}^+)$  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 $\pm$ 25	GOPAL	80	DPWA $\bar{K}N \rightarrow \bar{K}N$
2057	KANE	72	DPWA $K^- p \rightarrow \Sigma\pi$
2070 $\pm$ 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 $\pm$ 30	GOPAL	80	DPWA $\bar{K}N \rightarrow \bar{K}N$
906	KANE	72	DPWA $K^- p \rightarrow \Sigma\pi$
140 $\pm$ 20	BERTHON	70B	DPWA $K^- p \rightarrow \Sigma\pi$

 $\Sigma(2070)$  DECAY MODES

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

 $\Sigma(2070)$  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 $\pm$ 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 $\pm$ 0.02	BERTHON	70B	DPWA $K^- p \rightarrow \Sigma\pi$	

### $\Sigma(2070)$ REFERENCES

GOPAL	80	Toronto Conf. 159		(RHEL) IJP
KANE	74	LBL-2452		(LBL)
KANE	72	PR D5 1583		(LBL)
BERTHON	70B	NP B24 417	+Vrana, Butterworth+	(CDEF, RHEL, SACL) IJP

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