

# $\Sigma(3170)$ Bumps

$$I(J^P) = 1(?^?) \quad \text{Status: } *$$

## OMITTED FROM SUMMARY TABLE

Seen by AMIRZADEH 79 as a narrow 6.5-standard-deviation enhancement in the reaction  $K^- p \rightarrow Y^{*+} \pi^-$  using data from independent high statistics bubble chamber experiments at 8.25 and 6.5 GeV/c. The dominant decay modes are multibody, multistrange final states and the production is via isospin-3/2 baryon exchange. Isospin 1 is favored.

Not seen in a  $K^- p$  experiment in LASS at 11 GeV/c (ASTON 85B).

### $\Sigma(3170)$ MASS (PRODUCTION EXPERIMENTS)

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$\approx 3170$ OUR ESTIMATE				
$3170 \pm 5$	35	AMIRZADEH 79	HBC	$K^- p \rightarrow Y^{*+} \pi^-$

### $\Sigma(3170)$ WIDTH (PRODUCTION EXPERIMENTS)

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$< 20$	35	<sup>1</sup> AMIRZADEH 79	HBC	$K^- p \rightarrow Y^{*+} \pi^-$

### $\Sigma(3170)$ DECAY MODES (PRODUCTION EXPERIMENTS)

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1 \quad \Lambda K \bar{K} \pi$ 's	seen
$\Gamma_2 \quad \Sigma K \bar{K} \pi$ 's	seen
$\Gamma_3 \quad \Xi K \pi$ 's	seen

### $\Sigma(3170)$ BRANCHING RATIOS (PRODUCTION EXPERIMENTS)

$\Gamma(\Lambda K \bar{K} \pi \text{'s})/\Gamma_{\text{total}}$		$\Gamma_1/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>	
seen	AMIRZADEH 79 HBC $K^- p \rightarrow Y^{*+} \pi^-$	
$\Gamma(\Sigma K \bar{K} \pi \text{'s})/\Gamma_{\text{total}}$		$\Gamma_2/\Gamma$
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>	
seen	AMIRZADEH 79 HBC $K^- p \rightarrow Y^{*+} \pi^-$	

$\Gamma(\Xi K \pi's)/\Gamma_{\text{total}}$				$\Gamma_3/\Gamma$
<i>VALUE</i>	<i>DOCUMENT ID</i>	<i>TECN</i>	<i>COMMENT</i>	
<b>seen</b>	AMIRZADEH 79	HBC	$K^- p \rightarrow \Upsilon^{*+} \pi^-$	

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**$\Sigma(3170)$  FOOTNOTES  
(PRODUCTION EXPERIMENTS)**

<sup>1</sup> Observed width consistent with experimental resolution.

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**$\Sigma(3170)$  REFERENCES  
(PRODUCTION EXPERIMENTS)**

ASTON	85B	PR D32 2270	D. Aston <i>et al.</i>	(SLAC, CARL, CNRC, CINC)
AMIRZADEH	79	PL 89B 125	J. Amirzadeh <i>et al.</i>	(BIRM, CERN, GLAS+) I
Also		Toronto Conf. 263	J.B. Kinson <i>et al.</i>	(BIRM, CERN, GLAS+) I

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