

# Σ(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).

### Σ(3170) MASS (PRODUCTION EXPERIMENTS)

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

### Σ(3170) WIDTH (PRODUCTION EXPERIMENTS)

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

### Σ(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

### Σ(3170) BRANCHING RATIOS (PRODUCTION EXPERIMENTS)

<b><math>\Gamma(\Lambda K \bar{K} \pi \text{'s})/\Gamma_{\text{total}}</math></b>	<b><math>\Gamma_1/\Gamma</math></b>
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<b>seen</b>	AMIRZADEH 79   HBC $K^- p \rightarrow Y^{*+} \pi^-$
<b><math>\Gamma(\Sigma K \bar{K} \pi \text{'s})/\Gamma_{\text{total}}</math></b>	<b><math>\Gamma_2/\Gamma</math></b>
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<b>seen</b>	AMIRZADEH 79   HBC $K^- p \rightarrow Y^{*+} \pi^-$
<b><math>\Gamma(\Xi K \pi \text{'s})/\Gamma_{\text{total}}</math></b>	<b><math>\Gamma_3/\Gamma</math></b>
<u>VALUE</u>	<u>DOCUMENT ID</u> <u>TECN</u> <u>COMMENT</u>
<b>seen</b>	AMIRZADEH 79   HBC $K^- p \rightarrow Y^{*+} \pi^-$

## $\Sigma(3170)$ 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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