

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
≈ 3170 OUR ESTIMATE				
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	¹ AMIRZADEH 79	HBC	$K^- p \rightarrow Y^{*+} \pi^-$

Σ(3170) DECAY MODES (PRODUCTION EXPERIMENTS)

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \quad \Lambda K \bar{K} \pi$'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)

$\Gamma(\Lambda K \bar{K} \pi$'s)/$\Gamma_{\text{total}}$	Γ_1/Γ								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">VALUE</th> <th style="text-align: left;">DOCUMENT ID</th> <th style="text-align: left;">TECN</th> <th style="text-align: left;">COMMENT</th> </tr> </thead> <tbody> <tr> <td>seen</td> <td>AMIRZADEH 79</td> <td>HBC</td> <td>$K^- p \rightarrow Y^{*+} \pi^-$</td> </tr> </tbody> </table>	VALUE	DOCUMENT ID	TECN	COMMENT	seen	AMIRZADEH 79	HBC	$K^- p \rightarrow Y^{*+} \pi^-$	
VALUE	DOCUMENT ID	TECN	COMMENT						
seen	AMIRZADEH 79	HBC	$K^- p \rightarrow Y^{*+} \pi^-$						
$\Gamma(\Sigma K \bar{K} \pi$'s)/$\Gamma_{\text{total}}$	Γ_2/Γ								
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VALUE	DOCUMENT ID	TECN	COMMENT						
seen	AMIRZADEH 79	HBC	$K^- p \rightarrow Y^{*+} \pi^-$						

$\Gamma(\Xi K \pi's)/\Gamma_{\text{total}}$				Γ_3/Γ
<i>VALUE</i>	<i>DOCUMENT ID</i>	<i>TECN</i>	<i>COMMENT</i>	
seen	AMIRZADEH 79	HBC	$K^- p \rightarrow \Upsilon^{*+} \pi^-$	

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

¹ Observed width consistent with experimental resolution.

**$\Sigma(3170)$ 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
