$\Sigma(3170)$ Bumps

$I(J^P) = 1(?^?)$ Status: $*$

OMITTED FROM SUMMARY TABLE

Seen by AMIRZADEH 79 as a narrow 6.5-standard-deviation enhancement in the reaction $K^- p \to Y^{*+} \pi^-$ 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)

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$\approx$ **3170 OUR ESTIMATE**					
3170 ± 5	35	AMIRZADEH	79	HBC	$K^- p \to Y^{*+} \pi^-$

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

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

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

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\Lambda K \overline{K} \pi$'s	seen
Γ_2	$\Sigma K \overline{K} \pi$'s	seen
Γ_3	$\Xi K \pi$'s	seen

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

$\Gamma(\Lambda K \overline{K} \pi\text{'s})/\Gamma_{total}$ Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	AMIRZADEH	79	HBC	$K^- p \to Y^{*+} \pi^-$

$\Gamma(\Sigma K \overline{K} \pi\text{'s})/\Gamma_{total}$ Γ_2/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	AMIRZADEH	79	HBC	$K^- p \to Y^{*+} \pi^-$

$\Gamma\left(\Xi K\pi\text{'s}\right)/\Gamma_{\text{total}}$ $\qquad\qquad$ Γ_3/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
seen	AMIRZADEH 79	HBC	$K^- p \to Y^{*+}\pi^-$

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

[1] Observed width consistent with experimental resolution.

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

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