

$\Xi(1620)$

$I(J^P) = \frac{1}{2}(??)$ Status: **
J, P need confirmation.

OMITTED FROM SUMMARY TABLE

The clearest evidence is a peak in $\Xi^- \pi^+$ seen by SUMIHAMA 19.
 Older low-statistics experiments (e.g., BORENSTEIN 72 and HAS-SALL 81) have looked for the state but have not seen any effect.

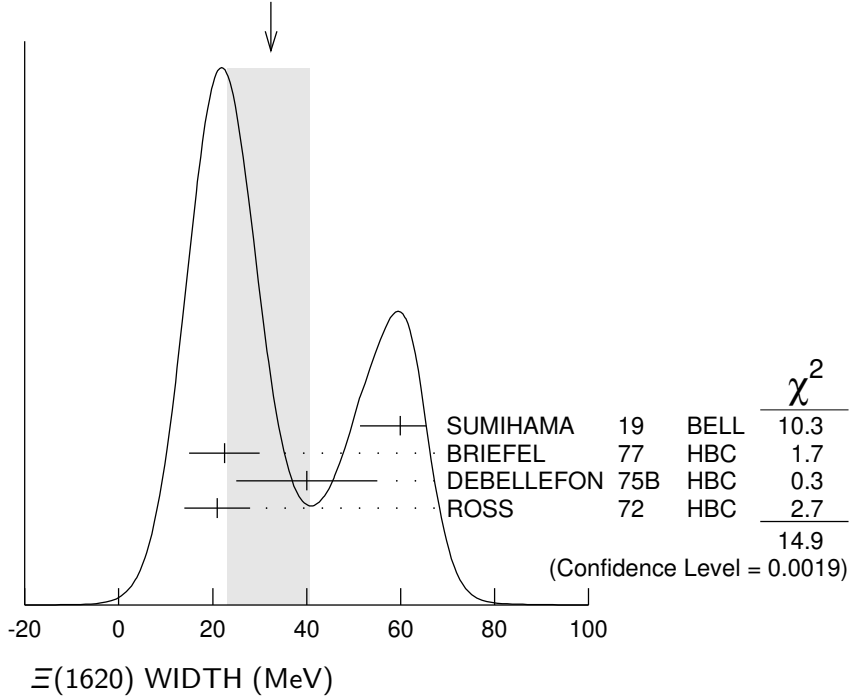
$\Xi(1620)$ MASS

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
≈ 1620 OUR ESTIMATE				
$1610.4 \pm 6.0^{+6.1}_{-4.2}$		SUMIHAMA 19	BELL	$\Xi_c^+ \rightarrow \Xi(1620)\pi^+$
1624 ± 3	31	BRIEFEL 77	HBC	$K^- p \rightarrow 2.87 \text{ GeV}/c$
1633 ± 12	34	DEBELLEFON 75B	HBC	$K^- p \rightarrow \Xi^- \bar{K}\pi$
1606 ± 6	29	ROSS 72	HBC	$K^- p \rightarrow 3.1\text{--}3.7 \text{ GeV}/c$

$\Xi(1620)$ WIDTH

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
32^{+8}_{-9} OUR AVERAGE				Error includes scale factor of 2.2. See the ideogram below.
$59.9 \pm 4.8^{+2.8}_{-7.1}$		SUMIHAMA 19	BELL	$\Xi_c^+ \rightarrow \Xi(1620)\pi^+$
22.5 ± 7.5	31	¹ BRIEFEL 77	HBC	$K^- p \rightarrow 2.87 \text{ GeV}/c$
40 ± 15	34	DEBELLEFON 75B	HBC	$K^- p \rightarrow \Xi^- \bar{K}\pi$
21 ± 7	29	ROSS 72	HBC	$K^- p \rightarrow \Xi^- \pi^+ K^{*0}(892)$

WEIGHTED AVERAGE
 32+8-9 (Error scaled by 2.2)



$\Xi(1620)$ DECAY MODES

Mode

 $\Gamma_1 \quad \Xi \pi$ **$\Xi(1620)$ FOOTNOTES**¹ The fit is insensitive to values between 15 and 30 MeV. **$\Xi(1620)$ REFERENCES**

SUMIHAMA	19	PRL 122 072501	M. Sumihama <i>et al.</i>	(BELLE Collab.)
HASSALL	81	NP B189 397	J.K. Hassall <i>et al.</i>	(CAVE, MSU)
BRIEFEL	77	PR D16 2706	E. Briefel <i>et al.</i>	(BRAN, UMD, SYRA+)
Also		Duke Conf. 317	E. Briefel <i>et al.</i>	(BRAN, UMD, SYRA+)
Hyperon Resonances,		1970		
Also		PR D12 1859	E. Briefel <i>et al.</i>	(BRAN, UMD, SYRA+)
DEBELLEFON	75B	NC 28A 289	A. de Bellefon <i>et al.</i>	(CDEF, SACL)
BORENSTEIN	72	PR D5 1559	S.R. Borenstein <i>et al.</i>	(BNL, MICH) I
ROSS	72	PL 38B 177	R.T. Ross <i>et al.</i>	(OXF) I

OTHER RELATED PAPERS

HUNGERBU...	74	PR D10 2051	V. Hungerbuhler <i>et al.</i>	(YALE, FNAL, BNL+)
SCHMIDT	73	Purdue Conf. 363	P.E. Schmidt	(BRAN)
KALBFLEISCH	70	Duke Conf. 331	G.R. Kalbfleisch	(BNL) I
Hyperon Resonances		1970		
APSELL	69	PRL 23 884	S.P. Apsell <i>et al.</i>	(BRAN, UMD, SYRA+)
BARTSCH	69	PL 28B 439	J. Bartsch <i>et al.</i>	(AACH, BERL, CERN+)