

**$\Xi(1950)$** 

$$I(J^P) = \frac{1}{2}(??) \quad \text{Status: } ***$$

We list here everything reported between 1875 and 2000 MeV. The accumulated evidence for a  $\Xi$  near 1950 MeV seems strong enough to include a  $\Xi(1950)$  in the main Baryon Table, but not much can be said about its properties. In fact, there may be more than one  $\Xi$  near this mass.

 **$\Xi(1950)$  MASS**

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>1950±15 OUR ESTIMATE</b>				
1955± 6		ADAMOVICH	99B WA89	$\Sigma^-$ nucleus, 345 GeV
1944± 9	129	BIAGI	87 SPEC	$\Xi^- \text{Be} \rightarrow (\Xi^- \pi^+) \pi^- X$
1963± 5±2	63	BIAGI	87C SPEC	$\Xi^- \text{Be} \rightarrow (\Lambda \bar{K}^0) X$
1937± 7	150	BIAGI	81 SPEC	SPS hyperon beam
1961±18	139	BRIEFEL	77 HBC	2.87 $K^- p \rightarrow \Xi^- \pi^+ X$
1936±22	44	BRIEFEL	77 HBC	2.87 $K^- p \rightarrow \Xi^0 \pi^- X$
1964±10	56	BRIEFEL	77 HBC	$\Xi(1530)\pi$
1900±12		DIBIANCA	75 DBC	$\Xi \pi$
1952±11	25	ROSS	73C	$(\Xi\pi)^-$
1956± 6	29	BADIER	72 HBC	$\Xi \pi, \Xi \pi \pi, Y K$
1955±14	21	GOLDWASSER	70 HBC	$\Xi \pi$
1894±18	66	DAUBER	69 HBC	$\Xi \pi$
1930±20	27	ALITTI	68 HBC	$\Xi^- \pi^+$
1933±16	35	BADIER	65 HBC	$\Xi^- \pi^+$

 **$\Xi(1950)$  WIDTH**

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>60±20 OUR ESTIMATE</b>				
68±22		ADAMOVICH	99B WA89	$\Sigma^-$ nucleus, 345 GeV
100±31	129	BIAGI	87 SPEC	$\Xi^- \text{Be} \rightarrow (\Xi^- \pi^+) \pi^- X$
25±15±1.2	63	BIAGI	87C SPEC	$\Xi^- \text{Be} \rightarrow (\Lambda \bar{K}^0) X$
60± 8	150	BIAGI	81 SPEC	SPS hyperon beam
159±57	139	BRIEFEL	77 HBC	2.87 $K^- p \rightarrow \Xi^- \pi^+ X$
87±26	44	BRIEFEL	77 HBC	2.87 $K^- p \rightarrow \Xi^0 \pi^- X$
60±39	56	BRIEFEL	77 HBC	$\Xi(1530)\pi$
63±78		DIBIANCA	75 DBC	$\Xi \pi$
38±10		ROSS	73C	$(\Xi\pi)^-$
35±11	29	BADIER	72 HBC	$\Xi \pi, \Xi \pi \pi, Y K$
56±26	21	GOLDWASSER	70 HBC	$\Xi \pi$
98±23	66	DAUBER	69 HBC	$\Xi \pi$
80±40	27	ALITTI	68 HBC	$\Xi^- \pi^+$
140±35	35	BADIER	65 HBC	$\Xi^- \pi^+$

**$\Xi(1950)$  DECAY MODES**

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $\Lambda \bar{K}$	seen
$\Gamma_2$ $\Sigma \bar{K}$	possibly seen
$\Gamma_3$ $\Xi \pi$	seen
$\Gamma_4$ $\Xi(1530) \pi$	
$\Gamma_5$ $\Xi \pi \pi$ (not $\Xi(1530) \pi$ )	

 **$\Xi(1950)$  BRANCHING RATIOS**

$\Gamma(\Sigma \bar{K})/\Gamma(\Lambda \bar{K})$					$\Gamma_2/\Gamma_1$
VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
<2.3	90	0	BIAGI	87C SPEC	$\Xi^-$ Be 116 GeV

  

$\Gamma(\Sigma \bar{K})/\Gamma_{\text{total}}$			$\Gamma_2/\Gamma$		
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
possibly seen	17	HASSALL	81 HBC	$K^- p$ 6.5 GeV/c	

  

$\Gamma(\Xi \pi)/\Gamma(\Xi(1530) \pi)$			$\Gamma_3/\Gamma_4$		
VALUE	DOCUMENT ID	TECN			
$2.8^{+0.7}_{-0.6}$	APSELL	70 HBC			

  

$\Gamma(\Xi \pi \pi \text{ (not } \Xi(1530) \pi))/\Gamma(\Xi(1530) \pi)$			$\Gamma_5/\Gamma_4$		
VALUE	DOCUMENT ID	TECN			
$0.0 \pm 0.3$	APSELL	70 HBC			

 **$\Xi(1950)$  REFERENCES**

ADAMOVICH	99B EPJ C11 271	M.I. Adamovich <i>et al.</i>	(CERN WA89 Collab.)
BIAGI	87 ZPHY C34 15	S.F. Biagi <i>et al.</i>	(BRIS, CERN, GEVA+)
BIAGI	87C ZPHY C34 175	S.F. Biagi <i>et al.</i>	(BRIS, CERN, GEVA+)
BIAGI	81 ZPHY C9 305	S.F. Biagi <i>et al.</i>	(BRIS, CAVE, GEVA+)
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		
DIBIANCA	75 NP B98 137	F.A. Dibianca, R.J. Endorf	(CMU)
ROSS	73C Purdue Conf. 345	R.T. Ross, J.L. Lloyd, D. Radojicic	(OXF)
BADIER	72 NP B37 429	J. Badier <i>et al.</i>	(EPOL)
APSELL	70 PRL 24 777	S.P. Apsell <i>et al.</i>	(BRAN, UMD, SYRA+)
GOLDWASSER	70 PR D1 1960	E.L. Goldwasser, P.F. Schultz	(ILL)
DAUBER	69 PR 179 1262	P.M. Dauber <i>et al.</i>	(LRL)
ALITTI	68 PRL 21 1119	J. Alitti <i>et al.</i>	(BNL, SYRA)
BADIER	65 PL 16 171	J. Badier <i>et al.</i>	(EPOL, SACL, AMST)