

**$\Xi(1950)$**

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

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

## $\Xi(1950)$ BRANCHING RATIOS

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

  

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

  

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

  

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

## $\Xi(1950)$ REFERENCES

BIAGI	87	ZPHY C34 15	+	(BRIS, CERN, GEVA, HEIDP, LAUS, LOQM, RAL)
BIAGI	87C	ZPHY C34 175	+	(BRIS, CERN, GEVA, HEIDP, LAUS, LOQM, RAL)
BIAGI	81	ZPHY C9 305	+	(BRIS, CAVE, GEVA, HEIDP, LAUS, LOQM, RHEL)
HASSALL	81	NP B189 397	+	Ansorge, Carter, Neale+ (CAVE, MSU)
BRIEFEL	77	PR D16 2706	+	Gourevitch, Chang+ (BRAN, UMD, SYRA, TUFTS)
Also	70	Duke Conf. 317	+	Briefel+ (BRAN, UMD, SYRA, TUFTS)
DIBIANCA	75	NP B98 137	+	Endorf (CMU)
ROSS	73C	Purdue Conf. 345	+	Lloyd, Radojicic (OXF)
BADIER	72	NP B37 429	+	Barrelet, Charlton, Videau (EPOL)
APSELL	70	PRL 24 777	+	(BRAN, UMD, SYRA, TUFTS) I
GOLDWASSER	70	PR D1 1960	+	Schultz (ILL)
DAUBER	69	PR 179 1262	+	Berge, Hubbard, Merrill, Miller (LRL) I
ALITTI	68	PRL 21 1119	+	Flaminio, Metzger, Radojicic+ (BNL, SYRA) I
BADIER	65	PL 16 171	+	Demoulin, Goldberg+ (EPOL, SACL, AMST) I