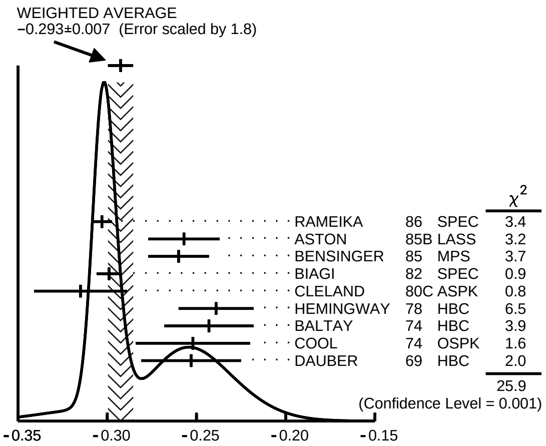

$\alpha(\Xi^-)\alpha_-(\Lambda)$

α FOR $\Xi^- \to \Lambda\pi^-$

The above average, $\alpha(\Xi^-)\,\alpha_-(\Lambda) = -0.293 \pm 0.007$, where the error includes a scale factor of 1.8, divided by our current average $\alpha_-(\Lambda) = 0.642 \pm 0.013$, gives the following value for $\alpha(\Xi^-)$.

VALUE	DOCUMENT ID
−0.456±0.014 OUR EVALUATION	Error includes scale factor of 1.8.

ϕ ANGLE FOR $\Xi^- \to \Lambda\pi^-$ $(\tan\phi = \beta/\gamma)$

VALUE (°)	EVTS	DOCUMENT ID		TECN	COMMENT
4 ± 4 OUR AVERAGE					
5 ±10	11k	ASTON	85B	LASS	$K^- p$
14.7±16.0	21k	[8] BENSINGER	85	MPS	5 GeV/c $K^- p$
11 ± 9	4303	BALTAY	74	HBC	1.75 GeV/c $K^- p$
5 ±16	2436	COOL	74	OSPK	1.8 GeV/c $K^- p$
−26 ±30	2724	BINGHAM	70B	OSPK	
−14 ±11	2781	DAUBER	69	HBC	Uses $\alpha_\Lambda = 0.647 \pm 0.020$
0 ±12	1004	[9] BERGE	66	HBC	
0 ±20.4	364	[9] LONDON	66	HBC	Using $\alpha_\Lambda = 0.62$
54 ±30	356	[9] CARMONY	64B	HBC	

[8] BENSINGER 85 used $\alpha_\Lambda = 0.642 \pm 0.013$.

[9] The errors have been multiplied by 1.2 due to approximations used for the Ξ polarization; see DAUBER 69 for a discussion.

g_A / g_V FOR $\Xi^- \to \Lambda e^- \overline{\nu}_e$

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
−0.25±0.05	1992	[10] BOURQUIN	83	SPEC	SPS hyperon beam

[10] BOURQUIN 83 assumes that $g_2 = 0$. Also, the sign has been changed to agree with our conventions, given in the Note on Baryon Decay Parameters in the neutron Listings.

Ξ^- REFERENCES

We have omitted some papers that have been superseded by later experiments. The omitted papers may be found in our 1986 edition (Physics Letters **170B**) or in earlier editions.

DUBBS 94 PRL 72 808 +Albuquerque, Bondar+ (FNAL E761 Collab.)
DURYEA 92 PRL 68 768 +Guglielmo, Heller+ (MINN, FNAL, MICH, RUTG)
LITTENBERG 92B PR D46 R892 +Shrock (BNL, STON)
HO 90 PRL 65 1713 +Longo, Nguyen, Luk+ (MICH, FNAL, MINN, RUTG)
Also 91 PR D44 3402 Ho, Longo, Nguyen, Luk+ (MICH, FNAL, MINN, RUTG)
TROST 89 PR D40 1703 +McCliment, Newsom, Hseuh, Mueller+ (FNAL-715 Collab.)
BIAGI 87B ZPHY C35 143 + (BRIS, CERN, GEVA, HEIDP, LAUS, LOQM, RAL)
RAMEIKA 86 PR D33 3172 +Beretvas, Deck+ (RUTG, MICH, WISC, MINN)
ASTON 85B PR D32 2270 +Carnegie+ (SLAC, CARL, CNRC, CINC)
BENSINGER 85 NP B252 561 + (CHIC, ELMT, FNAL, ISU, PNPI, MASD)
BOURQUIN 84 NP B241 1 + (BRIS, GEVA, HEIDP, LALO, RAL, STRB)
RAMEIKA 84 PRL 52 581 +Beretvas, Deck+ (RUTG, MICH, WISC, MINN)
BOURQUIN 83 ZPHY C21 1 +Brown+ (BRIS, GEVA, HEIDP, LALO, RL, STRB)
BIAGI 82 PL 112B 265 + (BRIS, CAVE, GEVA, HEIDP, LAUS, LOQM, RL)
BIAGI 82B PL 112B 277 + (LOQM, GEVA, RL, HEIDP, CAVE, LAUS, BRIS)
CLELAND 80C PR D21 12 +Cooper, Dris, Engels, Herbert+ (PITT, BNL)
THOMPSON 80 PR D21 25 +Cleland, Cooper, Dris, Engels+ (PITT, BNL)
BOURQUIN 79 PL 87B 297 + (BRIS, GEVA, HEIDP, ORSAY, RHEL, STRB)
HEMINGWAY 78 NP B142 205 +Armenteros+ (CERN, ZEEM, NIJM, OXF)
DIBIANCA 75 NP B98 137 +Endorf (CMU)
BALTAY 74 PR D9 49 +Bridgewater, Cooper, Gershwin+ (COLU, BING) J
COOL 74 PR D10 792 +Giacomelli, Jenkins, Kycia, Leontic, Li+ (BNL)
Also 72 PRL 29 1630 Cool, Giacomelli, Jenkins, Kycia, Leontic+ (BNL)
YEH 74 PR D10 3545 +Gaigalas, Smith, Zendle, Baltay+ (BING, COLU)
MAYEUR 72 NP B47 333 +VanBinst, Wilquet+ (BRUX, CERN, TUFTS, LOUC)
VOTRUBA 72 NP B45 77 +Safder, Ratcliffe (BIRM, EDIN)
WILQUET 72 PL 42B 372 +Fliagine, Guy+ (BRUX, CERN, TUFTS, LOUC)
DUCLOS 71 NP B32 493 +Freytag, Heintze, Heinzelmann, Jones+ (CERN)
BINGHAM 70B PR D1 3010 +Cook, Humphrey, Sander+ (UCSD, WASH)
GOLDWASSER 70 PR D1 1960 +Schultz (ILL)
STONE 70 PL 32B 515 +Berlinghieri, Bromberg, Cohen, Ferbel+ (ROCH)
DAUBER 69 PR 179 1262 +Berge, Hubbard, Merrill, Miller (LRL) J
SHEN 67 PL 25B 443 +Firestone, Goldhaber (UCB, LRL)
BERGE 66 PR 147 945 +Eberhard, Hubbard, Merrill+ (LRL)
CHIEN 66 PR 152 1171 +Lach, Sandweiss, Taft, Yeh, Oren+ (YALE, BNL)
LONDON 66 PR 143 1034 +Rau, Goldberg, Lichtman+ (BNL, SYRA)
BINGHAM 65 PRSL 285 202 (CERN)
PJERROU 65B PRL 14 275 +Schlein, Slater, Smith, Stork, Ticho (UCLA)
Also 65 Thesis Pjerrou (UCLA)
BADIER 64 Dubna Conf. 1 593 +Demoulin, Barloutaud+ (EPOL, SACL, ZEEM)
CARMONY 64B PRL 12 482 +Pjerrou, Schlein, Slater, Stork+ (UCLA) J
HUBBARD 64 PR 135B 183 +Berge, Kalbfleisch, Shafer+ (LRL)
FERRO-LUZZI 63 PR 130 1568 +Alston-Garnjost, Rosenfeld, Wojcicki (LRL)
JAUNEAU 63D Siena Conf. 4 + (EPOL, CERN, LOUC, RHEL, BERG)
Also 63B PL 5 261 Jauneau+ (EPOL, CERN, LOUC, RHEL, BERG)
SCHNEIDER 63 PL 4 360 (CERN)

OTHER RELATED PAPERS

PONDROM 85 PRPL 122 57 (WISC)
Review of FNAL hyperon experiments.

NOTE ON Ξ RESONANCES

The accompanying table gives our evaluation of the present status of the Ξ resonances. Not much is known about Ξ resonances. This is because (1) they can only be produced as a part of a final state, and so the analysis is more complicated than if direct formation were possible, (2) the production cross sections are small (typically a few μb), and (3) the final states are topologically complicated and difficult to study with electronic techniques. Thus early information about Ξ resonances came entirely from bubble chamber experiments, where the numbers of events are small, and only in recent years have electronic experiments made significant contributions. However, there is nothing new at all on Ξ resonances since our 1988 edition.

For a detailed earlier review, see Meadows [1].

Reference

1. B.T. Meadows, in *Proceedings of the IVth International Conference on Baryon Resonances* (Toronto, 1980), ed. N. Isgur, p. 283.

Table 1. The status of the Ξ resonances. Only those with an overall status of *** or **** are included in the Baryon Summary Table.

			Status as seen in —				
Particle	$L_{2I\cdot 2J}$	Overall status	$\Xi\pi$	ΛK	ΣK	$\Xi(1530)\pi$	Other channels
$\Xi(1318)$	P_{11}	****					Decays weakly
$\Xi(1530)$	P_{13}	****	****				
$\Xi(1620)$		*	*				
$\Xi(1690)$		***		***	**		
$\Xi(1820)$	D_{13}	***	**	***	**	**	
$\Xi(1950)$		***	**	**		*	
$\Xi(2030)$	1	***		**	***		
$\Xi(2120)$		*		*			
$\Xi(2250)$		**					3-body decays
$\Xi(2370)$	1	**					3-body decays
$\Xi(2500)$		*		*	*		3-body decays

**** Existence is certain, and properties are at least fairly well explored.
*** Existence ranges from very likely to certain, but further confirmation is desirable and/or quantum numbers, branching fractions, *etc.* are not well determined.
** Evidence of existence is only fair.
* Evidence of existence is poor.