See key on page 1343

Baryon Full Listings

Λ(2100), Λ(2110)

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\overline{K} \to \Lambda(2100) \to \Xi K$ $(\Gamma_1\Gamma_4)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
0.035 ± 0.018	LITCHFIELD	71	DPWA	$K^- p \to \Xi K$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.003	MULLER	69B	DPWA	$K^- p \to \Xi K$
0.05	TRIPP	67	RVUE	$K^- p \to \Xi K$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\overline{K} \to \Lambda(2100) \to \Lambda\omega$ $(\Gamma_1\Gamma_5)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
-0.070	[2] BACCARI	77	DPWA	GD_{37} wave
$+0.011$	[2] BACCARI	77	DPWA	GG_{17} wave
$+0.008$	[2] BACCARI	77	DPWA	GG_{37} wave
0.122 or 0.154	[1] NAKKASYAN	75	DPWA	$K^- p \to \Lambda\omega$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\overline{K} \to \Lambda(2100) \to N\overline{K}^*(892)$, S=3/2, D-wave $(\Gamma_1\Gamma_8)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
$+0.21 \pm 0.04$	CAMERON	78B	DPWA	$K^- p \to N\overline{K}^*$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\overline{K} \to \Lambda(2100) \to N\overline{K}^*(892)$, S=1/2, G-wave $(\Gamma_1\Gamma_7)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
-0.04 ± 0.03	[3] CAMERON	78B	DPWA	$K^- p \to N\overline{K}^*$

Λ(2100) FOOTNOTES

[1] The NAKKASYAN 75 values are from the two best solutions found. Each has the Λ(2100) and one additional resonance (P_3 or F_5).
[2] Note that the three for BACCARI 77 entries are for three different waves.
[3] The published sign has been changed to be in accord with the baryon-first convention. The upper limit on the G_3 wave is 0.03.

Λ(2100) REFERENCES

PDG	86	PL 170B	Aguilar-Benitez, Porter+	(CERN, CIT+)
PDG	82	PL 111B	Roos, Porter, Aguilar-Benitez+	(HELS, CIT, CERN)
GOPAL	80	Toronto Conf. 159		(RHEL) IJP
CAMERON	78B	NP B146 327	+Franek, Gopal, Kalmus, McPherson+	(RHEL, LOIC) IJP
DEBELLEFON	78	NC 42A 403	De Bellefon, Berthon, Billoir+	(CDEF, SACL) IJP
BACCARI	77	NC 41A 96	+Poulard, Revel, Tallini+	(SACL, CDEF) IJP
DECLAIS	77	CERN 77-16	+Duchon, Louvel, Patry, Seguinot+	(CAEN, CERN) IJP
GOPAL	77	NP B119 362	+Ross, VanHorn, McPherson+	(LOIC, RHEL) IJP
HEMINGWAY	75	NP B91 12	+Eades, Harmsen+	(CERN, HEIDH, MPIM) IJP
NAKKASYAN	75	NP B93 85		(CERN) IJP
KANE	74	LBL-2452		(LBL) IJP
RADER	73	NC 16A 178	+Barloutaud+	(SACL, HEID, CERN, RHEL, CDEF)
LITCHFIELD	71	NP B30 125	+..., Lesquoy+	(RHEL, CDEF, SACL) IJP
MULLER	69B	UCRL 19372 Thesis		(LRL)
TRIPP	67	NP B3 10	+Leith+	(LRL, SLAC, CERN, HEID, SACL)
COOL	66	PRL 16 1228	+Giacomelli, Kycia, Leontic, Lundby+	(BNL)
WOHL	66	PRL 17 107	+Solmitz, Stevenson	(LRL) IJP

Λ(2110) F_{05}

$I(J^P) = 0(\frac{5}{2}^+)$ Status: ***

For results published before 1974 (they are now obsolete), see our 1982 edition Physics Letters **111B** (1982). All the references have been retained.

This resonance is in the Baryon Summary Table, but the evidence for it could be better.

Λ(2110) MASS

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
2090 to 2140 (≈ 2110) OUR ESTIMATE				
2092 ± 25	GOPAL	80	DPWA	$\overline{K}N \to \overline{K}N$
2125 ± 25	CAMERON	78B	DPWA	$K^- p \to N\overline{K}^*$
2106 ± 50	DEBELLEFON	78	DPWA	$\overline{K}N \to \overline{K}N$
2140 ± 20	DEBELLEFON	77	DPWA	$K^- p \to \Sigma\pi$
2100 ± 50	GOPAL	77	DPWA	$\overline{K}N$ multichannel
2112 ± 7	KANE	74	DPWA	$K^- p \to \Sigma\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2137	BACCARI	77	DPWA	$K^- p \to \Lambda\omega$
2103	[1] NAKKASYAN	75	DPWA	$K^- p \to \Lambda\omega$

Λ(2110) WIDTH

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
150 to 250 (≈ 200) OUR ESTIMATE				
245 ± 25	GOPAL	80	DPWA	$\overline{K}N \to \overline{K}N$
160 ± 30	CAMERON	78B	DPWA	$K^- p \to N\overline{K}^*$
251 ± 50	DEBELLEFON	78	DPWA	$\overline{K}N \to \overline{K}N$
140 ± 20	DEBELLEFON	77	DPWA	$K^- p \to \Sigma\pi$
200 ± 50	GOPAL	77	DPWA	$\overline{K}N$ multichannel
190 ± 30	KANE	74	DPWA	$K^- p \to \Sigma\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
132	BACCARI	77	DPWA	$K^- p \to \Lambda\omega$
391	[1] NAKKASYAN	75	DPWA	$K^- p \to \Lambda\omega$

Λ(2110) DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$N\overline{K}$	5–25 %
Γ_2	$\Sigma\pi$	10–40 %
Γ_3	$\Lambda\omega$	seen
Γ_4	$\Sigma(1385)\pi$	seen
Γ_5	$\Sigma(1385)\pi$, P-wave	
Γ_6	$N\overline{K}^*(892)$	10–60 %
Γ_7	$N\overline{K}^*(892)$, S=1/2, F-wave	

The above branching fractions are our estimates, not fits or averages.

Λ(2110) BRANCHING RATIOS

See "Sign conventions for resonance couplings" in the Note on Λ and Σ Resonances.

$\Gamma(N\overline{K})/\Gamma_{total}$ Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.05 to 0.25 OUR ESTIMATE				
0.07 ± 0.03	GOPAL	80	DPWA	$\overline{K}N \to \overline{K}N$
0.27 ± 0.06	[2] DEBELLEFON	78	DPWA	$\overline{K}N \to \overline{K}N$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.07 ± 0.03	GOPAL	77	DPWA	See GOPAL 80

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\overline{K} \to \Lambda(2110) \to \Sigma\pi$ $(\Gamma_1\Gamma_2)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
$+0.14 \pm 0.01$	DEBELLEFON	77	DPWA	$K^- p \to \Sigma\pi$
$+0.20 \pm 0.03$	KANE	74	DPWA	$K^- p \to \Sigma\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$+0.10 \pm 0.03$	GOPAL	77	DPWA	$\overline{K}N$ multichannel

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\overline{K} \to \Lambda(2110) \to \Lambda\omega$ $(\Gamma_1\Gamma_3)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
<0.05	BACCARI	77	DPWA	$K^- p \to \Lambda\omega$
0.112	[1] NAKKASYAN	75	DPWA	$K^- p \to \Lambda\omega$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\overline{K} \to \Lambda(2110) \to \Sigma(1385)\pi$ $(\Gamma_1\Gamma_4)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
$+0.071 \pm 0.025$	[3] CAMERON	78	DPWA	$K^- p \to \Sigma(1385)\pi$

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\overline{K} \to \Lambda(2110) \to N\overline{K}^*(892)$ $(\Gamma_1\Gamma_6)^{1/2}/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
-0.17 ± 0.04	[4] CAMERON	78B	DPWA	$K^- p \to N\overline{K}^*$

Λ(2110) FOOTNOTES

[1] Found in one of two best solutions.
[2] The published error of 0.6 was a misprint.
[3] The CAMERON 78 upper limit on F-wave decay is 0.03. The sign here has been changed to be in accord with the baryon-first convention.
[4] The published sign has been changed to be in accord with the baryon-first convention. The CAMERON 78B upper limits on the P_3 and F_3 waves are each 0.03.

Λ(2110) REFERENCES

PDG	82	PL 111B	Roos, Porter, Aguilar-Benitez+	(HELS, CIT, CERN)
GOPAL	80	Toronto Conf. 159		(RHEL) IJP
CAMERON	78	NP B143 189	+Franek, Gopal, Bacon, Butterworth+	(RHEL, LOIC) IJP
CAMERON	78B	NP B146 327	+Franek, Gopal, Kalmus, McPherson+	(RHEL, LOIC) IJP
DEBELLEFON	78	NC 42A 403	De Bellefon, Berthon, Billoir+	(CDEF, SACL) IJP
BACCARI	77	NC 41A 96	+Poulard, Revel, Tallini+	(SACL, CDEF) IJP
DEBELLEFON	77	NC 37A 175	De Bellefon, Berthon, Billoir+	(CDEF, SACL) IJP
GOPAL	77	NP B119 362	+Ross, VanHorn, McPherson+	(LOIC, RHEL) IJP
NAKKASYAN	75	NP B93 85		(CERN) IJP
KANE	74	LBL-2452		(LBL) IJP