

$\Lambda(2325) \ 3/2^-$ $I(J^P) = 0(\frac{3}{2}^-)$ Status: *

OMITTED FROM SUMMARY TABLE

BACCARI 77 finds this state with either $J^P = 3/2^-$ or $3/2^+$ in a energy-dependent partial-wave analyses of $K^- p \rightarrow \Lambda\omega$ from 2070 to 2436 MeV. A subsequent semi-energy-independent analysis from threshold to 2436 MeV selects $3/2^-$. DEBELLEFON 78 (same group) also sees this state in an energy-dependent partial-wave analysis of $K^- p \rightarrow \bar{K}N$ data, and finds $J^P = 3/2^-$ or $3/2^+$. They again prefer $J^P = 3/2^-$, but only on the basis of model-dependent considerations.

 $\Lambda(2325)$ MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
≈ 2325 OUR ESTIMATE			
$2306.5 \pm 6.3 \pm 17.1$	ABLIKIM	25AF BES3	$\psi(3686) \rightarrow \Lambda\bar{\Sigma}^0\pi^0 +$ c.c. (PWA)
2342 ± 30	DEBELLEFON 78	DPWA	$\bar{K}N \rightarrow \bar{K}N$
2327 ± 20	BACCARI 77	DPWA	$K^- p \rightarrow \Lambda\omega$

 $\Lambda(2325)$ WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
$227.1 \pm 12.2 \pm 47.8$	ABLIKIM	25AF BES3	$\psi(3686) \rightarrow \Lambda\bar{\Sigma}^0\pi^0 +$ c.c. (PWA)
177 ± 40	DEBELLEFON 78	DPWA	$\bar{K}N \rightarrow \bar{K}N$
160 ± 40	BACCARI 77	IPWA	$K^- p \rightarrow \Lambda\omega$

 $\Lambda(2325)$ DECAY MODES

Mode	Γ_1/Γ
$\Gamma_1 \ N\bar{K}$	
$\Gamma_2 \ \Lambda\omega$	

 $\Lambda(2325)$ BRANCHING RATIOS

$\Gamma(N\bar{K})/\Gamma_{\text{total}}$	DOCUMENT ID	TECN	COMMENT	Γ_1/Γ
0.19 \pm 0.06	DEBELLEFON 78	DPWA	$\bar{K}N \rightarrow \bar{K}N$	

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\bar{K} \rightarrow \Lambda(2325) \rightarrow \Lambda\omega$	DOCUMENT ID	TECN	COMMENT	$(\Gamma_1\Gamma_2)^{1/2}/\Gamma$
0.06 \pm 0.02	¹ BACCARI 77	IPWA	DS_{33} wave	
0.05 \pm 0.02	¹ BACCARI 77	DPWA	DD_{13} wave	
0.08 \pm 0.03	¹ BACCARI 77	DPWA	DD_{33} wave	

$\Lambda(2325)$ FOOTNOTES

¹ Note that the three BACCARI 77 entries are for three different waves.

$\Lambda(2325)$ REFERENCES

ABLIKIM	25AF	JHEP 2502 212	M. Ablikim <i>et al.</i>	(BESIII Collab.)
DEBELLEFON	78	NC 42A 403	A. de Bellefon <i>et al.</i>	(CDEF, SACL) IJP
BACCARI	77	NC 41A 96	B. Baccari <i>et al.</i>	(SACL, CDEF) IJP
