

$\Lambda(2325) \ 3/2^-$

$I(J^P) = 0(\frac{3}{2}^-)$ 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				
2342 ± 30	DEBELLEFON 78	DPWA	$\overline{K} N \rightarrow \overline{K} N$	
2327 ± 20	BACCARI 77	DPWA	$K^- p \rightarrow \Lambda \omega$	

$\Lambda(2325)$ WIDTH				
VALUE (MeV)	DOCUMENT ID	TECN	COMMENT	
177 ± 40	DEBELLEFON 78	DPWA	$\overline{K} N \rightarrow \overline{K} N$	
160 ± 40	BACCARI 77	IPWA	$K^- p \rightarrow \Lambda \omega$	

$\Lambda(2325)$ DECAY MODES				
Mode				
Γ_1	$N \overline{K}$			
Γ_2	$\Lambda \omega$			

$\Lambda(2325)$ BRANCHING RATIOS					
$\Gamma(N \overline{K})/\Gamma_{\text{total}}$	DOCUMENT ID	TECN	COMMENT		Γ_1/Γ
VALUE					
0.19 ± 0.06	DEBELLEFON 78	DPWA	$\overline{K} N \rightarrow \overline{K} N$		

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

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
