$\Xi_c(2815)$

$I(J^P) = \frac{1}{2}(\frac{3}{2}^-)$ Status: ∗∗∗

Seen in both $\Xi_c \pi$ and $\Xi_c \pi \pi$ decays. The simplest assignment is that this belongs to the same SU(4) multiplet as the $\Lambda(1520)$ and the $\Lambda_c(2625)$, but the spin and parity have not been measured.

$\Xi_c(2815)$ MASSES

The masses are obtained from the mass-difference measurements that follow.

$\Xi_c(2815)^+$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
2816.67±0.31 OUR FIT Error includes scale factor of 1.1.				
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2817.0 ±1.2 $^{+0.7}_{-0.8}$	73 ± 10	LESIAK	08 BELL	$e^+ e^- \approx \Upsilon(4S)$

$\Xi_c(2815)^0$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
2820.22±0.32 OUR FIT				
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2820.4 ±1.4 $^{+0.9}_{-1.0}$	48 ± 8	LESIAK	08 BELL	$e^+ e^- \approx \Upsilon(4S)$

$\Xi_c(2815) - \Xi_c$ MASS DIFFERENCES

$m_{\Xi_c(2815)^+} - m_{\Xi_c^+}$

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
348.80±0.10 OUR FIT				
348.80±0.08±0.06	941	YELTON	16 BELL	$e^+ e^-$, Υ regions
• • • We do not use the following data for averages, fits, limits, etc. • • •				
348.6 ±0.6 ±1.0	20	ALEXANDER	99B CLE2	$e^+ e^- \approx \Upsilon(4S)$

$m_{\Xi_c(2815)^0} - m_{\Xi_c^0}$

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
349.35±0.11 OUR FIT				
349.35±0.08±0.07	1258	YELTON	16 BELL	$e^+ e^-$, Υ regions
• • • We do not use the following data for averages, fits, limits, etc. • • •				
347.2 ±0.7 ±2.0	9	ALEXANDER	99B CLE2	$e^+ e^- \approx \Upsilon(4S)$

$\Xi_c(2815)^+ - \Xi_c(2815)^0$ MASS DIFFERENCE

$m_{\Xi_c(2815)^+} - m_{\Xi_c(2815)^0}$

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
−3.55±0.28 OUR FIT			
• • • We do not use the following data for averages, fits, limits, etc. • • •			
−3.47±0.12±0.48	YELTON	16 BELL	941 and 1258 evts
−3.4 ±1.9 ±0.9	LESIAK	08 BELL	73 & 48 events

$\Xi_c(2815)$ WIDTHS

$\Xi_c(2815)^+$ WIDTH

VALUE (MeV)	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
2.43±0.20±0.17		941	YELTON	16	BELL	e^+e^-, Υ regions
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<3.5	90		ALEXANDER	99B	CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Xi_c(2815)^0$ WIDTH

VALUE (MeV)	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
2.54±0.18±0.17		1258	YELTON	16	BELL	e^+e^-, Υ regions
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<6.5	90		ALEXANDER	99B	CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Xi_c(2815)$ DECAY MODES

The $\Xi_c \pi \pi$ modes are consistent with being entirely via $\Xi_c(2645)\pi$.

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\Xi_c \pi$	seen
Γ_2	$\Xi_c^+ \pi^+ \pi^-$	seen
Γ_3	$\Xi_c^0 \pi^+ \pi^-$	seen

$\Xi_c(2815)$ REFERENCES

YELTON	16	PR D94 052011	J. Yelton *et al.*	(BELLE Collab.)
LESIAK	08	PL B665 9	T. Lesiak *et al.*	(BELLE Collab.)
ALEXANDER	99B	PRL 83 3390	J.P. Alexander *et al.*	(CLEO Collab.)