

$\Xi_c(2815)$

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

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
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2816.73 ± 0.21 OUR FIT

• • • We do not use the following data for averages, fits, limits, etc. • • •

2817.0 ± 1.2 $\begin{smallmatrix} +0.7 \\ -0.8 \end{smallmatrix}$	73 ± 10	LESLIAK	08 BELL	$e^+ e^- \approx \gamma(4S)$
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$\Xi_c(2815)^0$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
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2820.26 ± 0.27 OUR FIT

• • • We do not use the following data for averages, fits, limits, etc. • • •

2820.4 ± 1.4 $\begin{smallmatrix} +0.9 \\ -1.0 \end{smallmatrix}$	48 ± 8	LESLIAK	08 BELL	$e^+ e^- \approx \gamma(4S)$
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$\Xi_c(2815) - \Xi_c$ MASS DIFFERENCES

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

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
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348.80 ± 0.10 OUR FIT

348.80 ± 0.08 ± 0.06	941	YELTON	16 BELL	$e^+ e^-$, γ regions
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• • • We do not use the following data for averages, fits, limits, etc. • • •

348.6 ± 0.6 ± 1.0	20	ALEXANDER	99B CLE2	$e^+ e^- \approx \gamma(4S)$
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$m_{\Xi_c(2815)^0} - m_{\Xi_c^0}$

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
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349.35 ± 0.11 OUR FIT

349.35 ± 0.08 ± 0.07	1258	YELTON	16 BELL	$e^+ e^-$, γ regions
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• • • We do not use the following data for averages, fits, limits, etc. • • •

347.2 ± 0.7 ± 2.0	9	ALEXANDER	99B CLE2	$e^+ e^- \approx \gamma(4S)$
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$\Xi_c(2815)^+ - \Xi_c(2815)^0$ MASS DIFFERENCE

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

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
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-3.53 ± 0.27 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
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-3.4 ± 1.9 ± 0.9	LESLIAK	08 BELL	73 & 48 events
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$\Xi_c(2815)$ WIDTHS

$\Xi_c(2815)^+$ WIDTH

VALUE (MeV)	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
$2.43 \pm 0.20 \pm 0.17$		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
$2.54 \pm 0.18 \pm 0.17$		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)
$\Gamma_1 \quad \Xi'_c \pi$	seen
$\Gamma_2 \quad \Xi_c(2645)\pi$	seen

$\Gamma(\Xi'_c \pi)/\Gamma_{\text{total}}$

Γ_1/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
seen	YELTON	16 BELL	e^+e^- , Υ regions
seen	ALEXANDER	99B CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Gamma(\Xi_c(2645)\pi)/\Gamma_{\text{total}}$

Γ_2/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
seen	YELTON	16 BELL	e^+e^- , Υ regions
seen	LESIK	08 BELL	$e^+e^- \approx \Upsilon(4S)$

$\Xi_c(2815)$ REFERENCES

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