$\Xi_c(2645)$

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

A narrow peak seen in the $\Xi_c\pi$ mass spectrum. The natural assignment is that this is the $J^P = 3/2^+$ excitation of the Ξ_c in the same SU(4) multiplet as the $\Delta(1232)$, but the quantum numbers have not been measured.

$\Xi_c(2645)$ MASSES

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

$\Xi_c(2645)^+$ MASS

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
$2645.9^{+0.5}_{-0.6}$ OUR FIT	Error includes scale factor of 1.1.				
$2645.6\pm0.2^{+0.6}_{-0.8}$	578 ± 32	LESIAK	08	BELL	$e^+e^- \approx \Upsilon(4S)$

$\Xi_c(2645)^0$ MASS

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
2645.9 ± 0.5 OUR FIT					
$2645.7\pm0.2^{+0.6}_{-0.7}$	611 ± 32	LESIAK	08	BELL	$e^+e^- \approx \Upsilon(4S)$

$\Xi_c(2645) - \Xi_c$ MASS DIFFERENCES

$m_{\Xi_c(2645)^+} - m_{\Xi_c^0}$

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
$175.0^{+0.8}_{-0.6}$ OUR FIT	Error includes scale factor of 1.2.				
175.6 ± 1.4 OUR AVERAGE	Error includes scale factor of 1.7.				
$177.1\pm0.5\pm1.1$	47	FRABETTI	98B	E687	γ Be, $\overline{E}_\gamma = 220$ GeV
$174.3\pm0.5\pm1.0$	34	GIBBONS	96	CLE2	$e^+e^- \approx \Upsilon(4S)$

$m_{\Xi_c(2645)^0} - m_{\Xi_c^+}$

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
178.1 ± 0.6 OUR FIT					
$178.2\pm0.5\pm1.0$	55	AVERY	95	CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Xi_c(2645)^+ - \Xi_c(2645)^0$ MASS DIFFERENCE

$m_{\Xi_c(2645)^+} - m_{\Xi_c(2645)^0}$

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
0.0 ± 0.5 OUR FIT				
$-0.1\pm0.3\pm0.6$	LESIAK	08	BELL	≈ 600 evts each

$\Xi_c(2645)$ WIDTHS

$\Xi_c(2645)^+$ WIDTH

VALUE (MeV)	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
<3.1	90	GIBBONS	96	CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Xi_c(2645)^0$ WIDTH

VALUE (MeV)	*CL%*	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
<5.5	90	55	AVERY	95	CLE2	$e^+e^- \approx \Upsilon(4S)$

$\Xi_c(2645)$ DECAY MODES

$\Xi_c\pi$ is the only strong decay allowed to a Ξ_c resonance having this mass.

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

$\Xi_c(2645)$ REFERENCES

LESIAK	08	PL B665 9	T. Lesiak *et al.*	(BELLE Collab.)
FRABETTI	98B	PL B426 403	P.L. Frabetti *et al.*	(FNAL E687 Collab.)
GIBBONS	96	PRL 77 810	L.K. Gibbons *et al.*	(CLEO Collab.)
AVERY	95	PRL 75 4364	P. Avery *et al.*	(CLEO Collab.)