

$\Xi_c(2645)$

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

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) DOCUMENT ID
2647.4 ± 2.0 OUR FIT Error includes scale factor of 1.2.

 $\Xi_c(2645)^0$ MASS

VALUE (MeV) DOCUMENT ID
2644.5 ± 1.8 OUR FIT

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

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
175.6 ± 1.4 OUR FIT		Error includes scale factor of 1.7.		
175.6 ± 1.4 OUR AVERAGE		Error includes scale factor of 1.7.		
177.1 ± 0.5 ± 1.1	47	FRABETTI	98B E687	γ Be, $\bar{E}_\gamma = 220$ GeV
174.3 ± 0.5 ± 1.0	34	GIBBONS	96 CLE2	$e^+ e^- \approx \Upsilon(4S)$

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

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
178.2 ± 1.1 OUR FIT				
178.2 ± 0.5 ± 1.0	55	AVERY	95 CLE2	$e^+ e^- \approx \Upsilon(4S)$

 $\Xi_c(2645)$ WIDTHS **$\Xi_c(2645)^+$ WIDTH**

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

 $\Xi_c(2645)^0$ WIDTH

<u>VALUE (MeV)</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
< 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

FRABETTI	98B	PL B426 403	P.L. Frabetti <i>et al.</i>	(FNAL E687 Collab.)
GIBBONS	96	PRL 77 810	L.K. Gibbons <i>et al.</i>	(CLEO Collab.)
AVERY	95	PRL 75 4364	P. Avery <i>et al.</i>	(CLEO Collab.)