

# $\Xi_c(2645)$

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

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  $\Xi_c$  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

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>
<b>2646.6 ± 1.5 OUR FIT</b>	Error includes scale factor of 1.5.

### $\Xi_c(2645)^0$ MASS

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>
<b>2646.2 ± 1.2 OUR FIT</b>	

## $\Xi_c(2645) - \Xi_c$ 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>
<b>175.6 ± 1.4 OUR FIT</b> Error includes scale factor of 1.7.				
<b>175.6 ± 1.4 OUR AVERAGE</b> Error includes scale factor of 1.7.				
177.1 ± 0.5 ± 1.1	47	FRABETTI	98B E687	$\gamma$ 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>
<b>178.2 ± 1.1 OUR FIT</b>				
<b>178.2 ± 0.5 ± 1.0</b>	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>
<b>&lt; 3.1</b>	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>
<b>&lt; 5.5</b>	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  $\Xi_c$  resonance having this mass.

	Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$	$\Xi_c^0 \pi^+$	seen
$\Gamma_2$	$\Xi_c^+ \pi^-$	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.)