

# $\Lambda_c(2880)^+$

$I(J^P) = ?(??)$  Status: \*\*

## OMITTED FROM SUMMARY TABLE

A narrow, statistically significant peak ( $350^{+57}_{-55}$  events) seen in  $\Lambda_c^+ \pi^+ \pi^-$ . However, nothing is known about its quantum numbers—it could even be a  $\Sigma_c$  instead of a  $\Lambda_c^+$ —and it occurs in a mass region where several states are expected. ARTUSO 01 guesses, based on the narrow width, that it might be a  $J^P = 1/2^-$   $\Lambda_{c0}^+$ , where the subscript 0 indicates that the two light quarks are in a  $J^P = 0^-$  state.

## $\Lambda_c(2880)^+$ MASS

The mass is obtained from the  $\Lambda_c(2880)^+ - \Lambda_c^+$  mass-difference measurement below.

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>
<b>2880.9 ± 2.3 OUR FIT</b>	

## $\Lambda_c(2880)^+ - \Lambda_c^+$ MASS DIFFERENCE

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>596.0 ± 2.2 OUR FIT</b>				
<b>596 ± 1 ± 2</b>	350	ARTUSO	01 CLE2	$e^+ e^- \approx \Upsilon(4S)$

## $\Lambda_c(2880)^+$ WIDTH

<u>VALUE (MeV)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt; 8</b>	90	ARTUSO	01 CLE2	$e^+ e^- \approx \Upsilon(4S)$

## $\Lambda_c(2880)^+$ DECAY MODES

Mode	Fraction ( $\Gamma_j/\Gamma$ )
$\Gamma_1$ $\Lambda_c^+ \pi^+ \pi^-$	seen
$\Gamma_2$ $\Sigma_c(2455)\pi$	seen
$\Gamma_3$ $\Sigma_c(2520)\pi$	not seen

## $\Lambda_c(2880)^+$ BRANCHING RATIOS

$\Gamma(\Sigma_c(2455)\pi)/\Gamma(\Lambda_c^+ \pi^+ \pi^-)$				$\Gamma_2/\Gamma_1$
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.31 ± 0.06 ± 0.03</b>	96	ARTUSO	01 CLE2	$e^+ e^- \approx \Upsilon(4S)$

$\Gamma(\Sigma_c(2520)\pi)/\Gamma(\Lambda_c^+\pi^+\pi^-)$					$\Gamma_3/\Gamma_1$
<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>&lt;0.11</b>	90	ARTUSO	01	CLE2	$e^+e^- \approx \gamma(4S)$

**$\Lambda_c(2880)^+$  REFERENCES**

ARTUSO	01	PRL 86 4479	M. Artuso <i>et al.</i>	(CLEO Collab.)
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