

$\Lambda_c(2940)^+$  $I(J^P) = 0(\frac{3}{2}^-)$  Status: \*\*\*

A narrow peak seen in  $pD^0$  and in  $\Lambda_c^+ \pi^+ \pi^-$ . It is not seen in  $pD^+$ , and therefore it is a  $\Lambda_c^+$  and not a  $\Sigma_c$ .  $J^P = 3/2^-$  is favored, but not certain.

 $\Lambda_c(2940)^+$  MASS

VALUE (MeV)	EVTs	DOCUMENT ID	TECN	COMMENT
<b>2939.6<sup>+1.3</sup><sub>-1.5</sub> OUR AVERAGE</b>				
2944.8 <sup>+3.5</sup> <sub>-2.5</sub> ± 0.4 <sup>+0.1</sup> <sub>-4.6</sub>		<sup>1</sup> AAIJ	17s	LHCB in $\Lambda_b^0 \rightarrow D^0 p \pi^-$
2939.8 ± 1.3 ± 1.0	2.2k	AUBERT	07	BABR in $pD^0$
2938.0 ± 1.3 <sup>+2.0</sup> <sub>-4.0</sub>	220	MIZUK	07	BELL in $\Sigma_c(2455)^{0,++} \pi^\pm$

<sup>1</sup> The third AAIJ 17s uncertainty comes from modeling the resonant shape of the nearby  $\Lambda_c(2880)^+$  and the background (non-resonant) amplitudes.

 $\Lambda_c(2940)^+$  WIDTH

VALUE (MeV)	EVTs	DOCUMENT ID	TECN	COMMENT
<b>20<sup>+6</sup><sub>-5</sub> OUR AVERAGE</b>				
27.7 <sup>+8.2</sup> <sub>-6.0</sub> ± 0.9 <sup>+5.2</sup> <sub>-10.4</sub>		<sup>2</sup> AAIJ	17s	LHCB in $\Lambda_b^0 \rightarrow D^0 p \pi^-$
17.5 ± 5.2 ± 5.9	2.2k	AUBERT	07	BABR in $pD^0$
13 <sup>+8</sup> <sub>-5</sub> <sup>+27</sup> <sub>-7</sub>	220	MIZUK	07	BELL in $\Sigma_c(2455)^{0,++} \pi^\pm$

<sup>2</sup> The third AAIJ 17s uncertainty comes from modeling the resonant shape of the nearby  $\Lambda_c(2880)^+$  and the background (non-resonant) amplitudes.

 $\Lambda_c(2940)^+$  DECAY MODES

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $pD^0$	seen
$\Gamma_2$ $\Sigma_c(2455)^{0,++} \pi^\pm$	seen

 $\Lambda_c(2940)^+$  REFERENCES

AAIJ	17s	JHEP 1705 030	R. Aaij <i>et al.</i>	(LHCb Collab.) JP
AUBERT	07	PRL 98 012001	B. Aubert <i>et al.</i>	(BABAR Collab.)
MIZUK	07	PRL 98 262001	R. Mizuk <i>et al.</i>	(BELLE Collab.)