NODE=B122

$\Lambda_c(2940)^+$

$I(J^P) = 0(\frac{3}{2}^-)$ 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 Λ_c^+ and not a Σ_c. $J^P = 3/2^-$ is favored, but not certain.

NODE=B122

$\Lambda_c(2940)^+$ MASS

NODE=B122M

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$2939.6^{+1.3}_{-1.5}$ OUR AVERAGE					
$2944.8^{+3.5}_{-2.5}\pm0.4^{+0.1}_{-4.6}$		[1] AAIJ	17S	LHCB	in $\Lambda_b^0 \to D^0 p\pi^-$
$2939.8\pm1.3\pm1.0$	2.2k	AUBERT	07	BABR	in pD^0
$2938.0\pm1.3^{+2.0}_{-4.0}$	220	MIZUK	07	BELL	in $\Sigma_c(2455)^{0,++}\pi^\pm$

[1] The third AAIJ 17S uncertainty comes from modeling the resonant shape of the nearby $\Lambda_c(2880)^+$ and the background (non-resonant) amplitudes.

NODE=B122M;LINKAGE=B

$\Lambda_c(2940)^+$ WIDTH

NODE=B122W

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
$20\ ^{+6}_{-5}$ OUR AVERAGE					
$27.7^{+8.2}_{-6.0}\pm\ 0.9^{+\ 5.2}_{-10.4}$		[2] AAIJ	17S	LHCB	in $\Lambda_b^0 \to D^0 p\pi^-$
$17.5\pm5.2\pm\ 5.9$	2.2k	AUBERT	07	BABR	in pD^0
$13\ ^{+8}_{-5}\ ^{+27}_{-\ 7}$	220	MIZUK	07	BELL	in $\Sigma_c(2455)^{0,++}\pi^\pm$

[2] The third AAIJ 17S uncertainty comes from modeling the resonant shape of the nearby $\Lambda_c(2880)^+$ and the background (non-resonant) amplitudes.

NODE=B122W;LINKAGE=A

$\Lambda_c(2940)^+$ DECAY MODES

NODE=B122220;NODE=B122

	Mode	Fraction (Γ_i/Γ)	
Γ_1	$\Lambda_c\eta$		DESIG=3
Γ_2	pD^0	seen	DESIG=1;OUR EST
Γ_3	$\Sigma_c(2455)^{0,++}\pi^\pm$	seen	DESIG=2;OUR EST

$\Lambda_c(2940)^+$ BRANCHING RATIOS

NODE=B122225

$\Gamma(pD^0)/\Gamma_{total}$ Γ_2/Γ

NODE=B122R00

NODE=B122R00

$\Gamma(\Lambda_c\eta)/\Gamma(\Sigma_c(2455)^{0,++}\pi^\pm)$ Γ_1/Γ_3

NODE=B122R02
NODE=B122R02

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<1.11	90	LI	24C	BELL	e^+e^- at $\sim \Upsilon$(nS)

$\Gamma(pD^0)/\Gamma(\Sigma_c(2455)^{0,++}\pi^\pm)$ Γ_2/Γ_3

NODE=B122R01
NODE=B122R01

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
$3.59\pm0.21\pm0.56$	16k	LI	24C	BELL	e^+e^- at $\sim \Upsilon$(nS)

$\Lambda_c(2940)^+$ REFERENCES

NODE=B122

LI	24C	PR D110 032021	S.X. Li *et al.*	(BELLE Collab.)
AAIJ	17S	JHEP 1705 030	R. Aaij *et al.*	(LHCb Collab.) JP
AUBERT	07	PRL 98 012001	B. Aubert *et al.*	(BABAR Collab.)
MIZUK	07	PRL 98 262001	R. Mizuk *et al.*	(BELLE Collab.)

REFID=62939
REFID=57813
REFID=51585
REFID=51816