NODE=B157

$\Xi_c(3055)$

$I(J^P) = ?(\frac{3}{2}^+)$ Status: ∗∗∗

NODE=B157

AAIJ 25H establishes spin-parity of the $\Xi_c(3055)^+$ and $\Xi_c(3055)^0$ to be $J^P = 3/2^+$ at 6.5σ and 3.5σ, respectively, versus other hypotheses.

$\Xi_c(3055)$ MASSES

NODE=B157205

$\Xi_c(3055)^+$ MASS

NODE=B157M+ NODE=B157M+

NEW

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
3055.2 ±0.7 OUR AVERAGE		Error includes scale factor of 2.4. [3055.9 ± 0.4 MeV OUR 2025 AVERAGE]			
3054.52±0.36±0.17	637	AAIJ	25H	LHCB	$\Xi_b \to \Xi_c(3055)\pi^-$
3055.9 ±0.4	894	KATO	16	BELL	e^+e^- Υ region
• • • We do not use the following data for averages, fits, limits, etc. • • •					
3058.1 ±1.0 ±2.1	199 ± 46	KATO	14	BELL	See KATO 16
3054.2 ±1.2 ±0.5	218 ± 95	AUBERT	08J	BABR	$e^+e^- \approx$ 10.58 GeV

$\Xi_c(3055)^0$ MASS

NODE=B157M NODE=B157M

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
3061.00±0.80±0.23	232	AAIJ	25H	LHCB	$\Xi_b \to \Xi_c(3055)\pi^-$

$\Xi_c(3055)$ WIDTHS

NODE=B157210

$\Xi_c(3055)^+$ WIDTH

NODE=B157W+ NODE=B157W+

NEW

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
8.0 ±0.8 OUR AVERAGE [7.8 ± 1.9 MeV OUR 2025 AVERAGE]					
8.01±0.76± 0.34	637	AAIJ	25H	LHCB	$\Xi_b \to \Xi_c(3055)\pi^-$
7.8 ±1.2 ± 1.5		KATO	16	BELL	e^+e^- Υ region
• • • We do not use the following data for averages, fits, limits, etc. • • •					
9.7 ±3.4 ± 3.3	199 ± 46	KATO	14	BELL	e^+e^- $\Upsilon(1S)$ to $\Upsilon(5S)$
17 ±6 ±11	218 ± 95	AUBERT	08J	BABR	$e^+e^- \approx$ 10.58 GeV

$\Xi_c(3055)^0$ WIDTH

NODE=B157W NODE=B157W

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
12.4±2.0±1.1	232	AAIJ	25H	LHCB	$\Xi_b \to \Xi_c(3055)\pi^-$

$\Xi_c(3055)$ DECAY MODES

NODE=B157215;NODE=B157

	Mode	Fraction (Γ_i/Γ)	
Γ_1	$\Sigma^{++}K^-$	seen	DESIG=1;OUR EST
Γ_2	ΛD^+	seen	DESIG=2
Γ_3	ΛD^0	seen	DESIG=3

$\Xi_c(3055)$ BRANCHING RATIOS

NODE=B157220

$\Gamma(\Lambda D^+)/\Gamma(\Sigma^{++}K^-)$ Γ_2/Γ_1

NODE=B157R01 NODE=B157R01

VALUE	DOCUMENT ID		TECN	COMMENT
5.09±1.01±0.76	KATO	16	BELL	721 and 103 evts

$\Gamma(\Lambda D^+)/\Gamma_{total}$ Γ_2/Γ

NODE=B157R00 NODE=B157R00

VALUE	DOCUMENT ID		TECN	COMMENT
seen	AAIJ	25H	LHCB	$\Xi_b \to \Xi_c(3055)\pi^-$

$\Gamma(\Lambda D^0)/\Gamma_{total}$ Γ_3/Γ

NODE=B157R02 NODE=B157R02

VALUE	DOCUMENT ID		TECN	COMMENT
seen	AAIJ	25H	LHCB	$\Xi_b \to \Xi_c(3055)\pi^-$

$\Xi_c(3055)$ REFERENCES

NODE=B157

AAIJ	25H	PRL 134 081901	R. Aaij *et al.*	(LHCb Collab.) JP	REFID=63314
KATO	16	PR D94 032002	Y. Kato *et al.*	(BELLE Collab.)	REFID=57420
KATO	14	PR D89 052003	Y. Kato *et al.*	(BELLE Collab.)	REFID=55801
AUBERT	08J	PR D77 012002	B. Aubert *et al.*	(BABAR Collab.)	REFID=52168