$\Xi_b(5945)^0$

$J^P = \frac{3}{2}^+$ Status: ***

Quantum numbers are based on quark model expectations.

$\Xi_b(5945)^0$ MASS

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
5952.3 ±0.6 OUR AVERAGE				
5952.4 ±0.1 ±0.6	[1] HAYRAPETY...24R		CMS	pp at 13 TeV
5952.35±0.02±0.58	[2,3] AAIJ	23AU	LHCB	pp at 7, 8, 13 TeV
5952.3 ±0.1 ±0.6	[4] AAIJ	16AE	LHCB	pp at 7, 8 TeV
5951.4 ±0.8 ±0.6	[5] CHATRCHYAN	12S	CMS	pp at 7 TeV, 5.3 fb^{-1}

[1] HAYRAPETYAN 24R measures $m(\Xi_b(4945)^0) - m(\Xi_b^-) - m(\pi^\pm) = 15.810 \pm 0.077 \pm 0.052$ MeV. We have adjusted the measurement to our best values of $m(\Xi_b^-) = 5797.0 \pm 0.6$ MeV, $m(\pi^+) = 139.57039 \pm 0.00018$ MeV. Our first error is their experiment's error and our second error is the systematic error from using our best values.

[2] Measured using $\Xi_b(5945)^0 \to \Xi_b^- \pi^+$, $\Xi_b^- \to \Xi_c^0 \pi^-$, $\Xi_c^0 \to p K^- K^- \pi^+$ decays.

[3] AAIJ 23AU measures $m(\Xi_b(5945)^0) - m(\Xi_b^-) - m(\pi^+) = 15.80 \pm 0.02 \pm 0.01$ MeV. We have adjusted the measurement to our best values of $m(\Xi_b^-) = 5797.0 \pm 0.6$ MeV, $m(\pi^+) = 139.57039 \pm 0.00018$ MeV. Our first error is their experiment's error and our second error is the systematic error from using our best values.

[4] AAIJ 16AE measures $m(\Xi_b(5945)^0) - m(\Xi_b^-) - m(\pi^+) = 15.727 \pm 0.068 \pm 0.023$ MeV. We have adjusted the measurement to our best values of $m(\Xi_b^-) = 5797.0 \pm 0.6$ MeV, $m(\pi^+) = 139.57039 \pm 0.00018$ MeV. Our first error is their experiment's error and our second error is the systematic error from using our best values.

[5] CHATRCHYAN 12S measures $m(\Xi_b(5945)^0) - m(\Xi_b^-) - m(\pi^+) = 14.84 \pm 0.74 \pm 0.28$ MeV. We have adjusted the measurement to our best values of $m(\Xi_b^-) = 5797.0 \pm 0.6$ MeV, $m(\pi^+) = 139.57039 \pm 0.00018$ MeV. Our first error is their experiment's error and our second error is the systematic error from using our best values.

$\Xi_b(5945)^0$ WIDTH

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
0.87±0.07 OUR AVERAGE				
$0.87^{+0.22}_{-0.20} \pm 0.16$	HAYRAPETY...24R		CMS	pp at 13 TeV
0.87±0.06±0.05	[1] AAIJ	23AU	LHCB	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.90±0.16±0.08	[1] AAIJ	16AE	LHCB	pp at 7, 8 TeV
2.1 ±1.7	[2] CHATRCHYAN	12S	CMS	pp at 7 TeV, 5.3 fb^{-1}

[1] Measured using $\Xi_b(5945)^0 \to \Xi_b^- \pi^+$, $\Xi_b^- \to \Xi_c^0 \pi^-$, $\Xi_c^0 \to p K^- K^- \pi^+$ decays.

[2] Systematic uncertainty not evaluated.

$\Xi_b(5945)^0$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\Xi_b^- \pi^+$	seen

$\Xi_b(5945)^0$ BRANCHING RATIOS

$\Gamma(\Xi_b^- \pi^+)/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE	*DOCUMENT ID*	*TECN*	*COMMENT*
seen	[1] HAYRAPETY...24R	CMS	pp at 13 TeV
seen	AAIJ 16AE	ATLS	pp at 7, 8 TeV
seen	CHATRCHYAN 12S	CMS	pp at 7 TeV, 5.3 fb^{-1}

[1] HAYRAPETYAN 24R measures $B(\Xi_b(5945)^0 \to \Xi_b^- \pi^+) \times B(b \to \Xi_b(5945)^0 X)$ / $B(b \to \Xi_b^- X) = 0.22 \pm 0.02 \pm 0.02$.

$\Xi_b(5945)^0$ REFERENCES

HAYRAPETY...	24R	PR D110 012002	A. Hayrapetyan *et al.*	(CMS Collab.)
AAIJ	23AU	PRL 131 171901	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	16AE	JHEP 1605 161	R. Aaij *et al.*	(LHCb Collab.)
CHATRCHYAN	12S	PRL 108 252002	S. Chatrchyan *et al.*	(CMS Collab.)