

$\Lambda_b(5920)^0$

$$J^P = \frac{3}{2}^-$$

Status: ***

Quantum numbers are based on quark model expectations.

$\Lambda_b(5920)^0$ MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
5919.92 ± 0.19 OUR AVERAGE	Error includes scale factor of 1.1.		
5919.4 ± 0.5 ± 0.2	1,2 AALTONEN	13V CDF	$p\bar{p}$ at 1.96 TeV
5920.00 ± 0.09 ± 0.17	3,4 AAIJ	12AL LHCB	pp at 7 TeV
¹ Measured in $\Lambda_b(5920)^0 \rightarrow \Lambda_b^0 \pi^+ \pi^-$ decays with $17.3^{+5.3}_{-4.6}$ events, with a significance of 3.5 sigma.			
² AALTONEN 13V measures $m(\Lambda_b(5920)^0) - m(\Lambda_b^0) - 2m(\pi) = 20.68 \pm 0.35 \pm 0.30$ MeV. We have adjusted the measurement to our best values of $m(\Lambda_b^0) = 5619.60 \pm 0.17$ MeV and $m(\pi) = 139.57061 \pm 0.00024$ MeV. Our first error is their experiment's error and our second error is the systematic error from using our best values.			
³ Observed in $\Lambda_b(5920)^0 \rightarrow \Lambda_b^0 \pi^+ \pi^-$ decays with 52.5 ± 8.1 candidates with a significance of 10.2 sigma.			
⁴ AAIJ 12AL measures $m(\Lambda_b(5920)^0) - m(\Lambda_b^0) = 300.40 \pm 0.08 \pm 0.04$ MeV. We have adjusted the measurement to our best value of $m(\Lambda_b^0) = 5619.60 \pm 0.17$ MeV. Our first error is their experiment's error and our second error is the systematic error from using our best values.			

$\Lambda_b(5920)^0$ WIDTH

VALUE (MeV)	CL%	DOCUMENT ID	TECN	COMMENT
<0.63	90	AAIJ	12AL LHCB	pp at 7 TeV

$\Lambda_b(5920)^0$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \Lambda_b^0 \pi^+ \pi^-$	seen

$\Lambda_b(5920)^0$ BRANCHING RATIOS

$\Gamma(\Lambda_b^0 \pi^+ \pi^-)/\Gamma_{\text{total}}$	Γ_1/Γ		
VALUE	DOCUMENT ID	TECN	COMMENT
seen	AAIJ	12AL LHCB	pp at 7 TeV

$\Lambda_b(5920)^0$ REFERENCES

AALTONEN	13V	PR D88 071101	T. Aaltonen <i>et al.</i>	(CDF Collab.)
AAIJ	12AL	PRL 109 172003	R. Aaij <i>et al.</i>	(LHCb Collab.)