

$\Xi_b(6227)^-$ $J^P = ?^?$

Status: ***

NODE=B180

 $\Xi_b(6227)^-$ MASS

NODE=B180M

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
6227.9±0.9±0.2	¹ AAIJ	21 LHCb	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
6226.9±2.0±0.4	^{2,3} AAIJ	18H LHCb	Repl. by AAIJ 2021
¹ AAIJ 21 measures $m(\Xi_b(6227)^-) - m(\Lambda_b^0) = 608.3 \pm 0.8 \pm 0.4$ MeV. We have adjusted the measurement to our best value of $m(\Lambda_b^0) = 5619.57 \pm 0.16$ MeV. Our first error is their experiment's error and our second error is the systematic error from using our best values.			
² Uses $\Lambda_b^0 K^-$ and $\Xi_b^0 \pi^-$ modes.			
³ Measures mass difference $m(\Xi_b(6227)^-) - m(\Lambda_b^0) = 607.3 \pm 2.0 \pm 0.3$ MeV and uses $m(\Lambda_b^0) = 5619.58 \pm 0.17$ MeV.			

NODE=B180M

NODE=B180M;LINKAGE=C

NODE=B180M;LINKAGE=A

NODE=B180M;LINKAGE=B

 $\Xi_b(6227)^-$ WIDTH

NODE=B180W

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
19.9±2.1±1.5	¹ AAIJ	21 LHCb	pp at 7, 8, 13 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
18.1±5.4±1.8	² AAIJ	18H LHCb	Repl. by AAIJ 2021
¹ Uses $\Lambda_b^0 K^-$ decays.			
² Uses $\Lambda_b^0 K^-$ and $\Xi_b^0 \pi^-$ modes.			

NODE=B180W

NODE=B180W;LINKAGE=B

NODE=B180W;LINKAGE=A

 $\Xi_b(6227)^-$ DECAY MODES

NODE=B180215;NODE=B180

Mode	Fraction (Γ_i/Γ)	Scale factor
Γ_1 $\Lambda_b^0 K^- \times B(b \rightarrow \Xi_b(6227))/B(b \rightarrow \Lambda_b^0)$	$(3.20 \pm 0.35) \times 10^{-3}$	
Γ_2 $\Xi_b^0 \pi^- \times B(b \rightarrow \Xi_b(6227))/B(b \rightarrow \Xi_b^0)$	$(2.8 \pm 1.1) \%$	1.8

DESIG=1

DESIG=2

 $\Xi_b(6227)^-$ BRANCHING RATIOS

NODE=B180220

 $\Gamma(\Lambda_b^0 K^- \times B(b \rightarrow \Xi_b(6227))/B(b \rightarrow \Lambda_b^0))/\Gamma_{\text{total}}$ Γ_1/Γ NODE=B180R01
NODE=B180R01

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
3.20±0.35 OUR AVERAGE			
3.0 ±0.3 ±0.4	AAIJ	18H LHCb	pp at 7, 8 TeV
3.4 ±0.3 ±0.4	AAIJ	18H LHCb	pp at 13 TeV

OCCUR=2

 $\Gamma(\Xi_b^0 \pi^- \times B(b \rightarrow \Xi_b(6227))/B(b \rightarrow \Xi_b^0))/\Gamma_{\text{total}}$ Γ_2/Γ NODE=B180R02
NODE=B180R02

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
28±11 OUR AVERAGE	Error includes scale factor of 1.8.		
47±10±7	AAIJ	18H LHCb	pp at 7, 8 TeV
22±6±3	AAIJ	18H LHCb	pp at 13 TeV

OCCUR=2

 $\Xi_b(6227)^-$ REFERENCES

NODE=B180

AAIJ	21	PR D103 012004	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	18H	PRL 121 072002	R. Aaij <i>et al.</i>	(LHCb Collab.)

REFID=60752
REFID=58863