

$$I(J^P) = \frac{1}{2}(\frac{1}{2}^+) \text{ Status: } ***$$

I, J, P need confirmation.

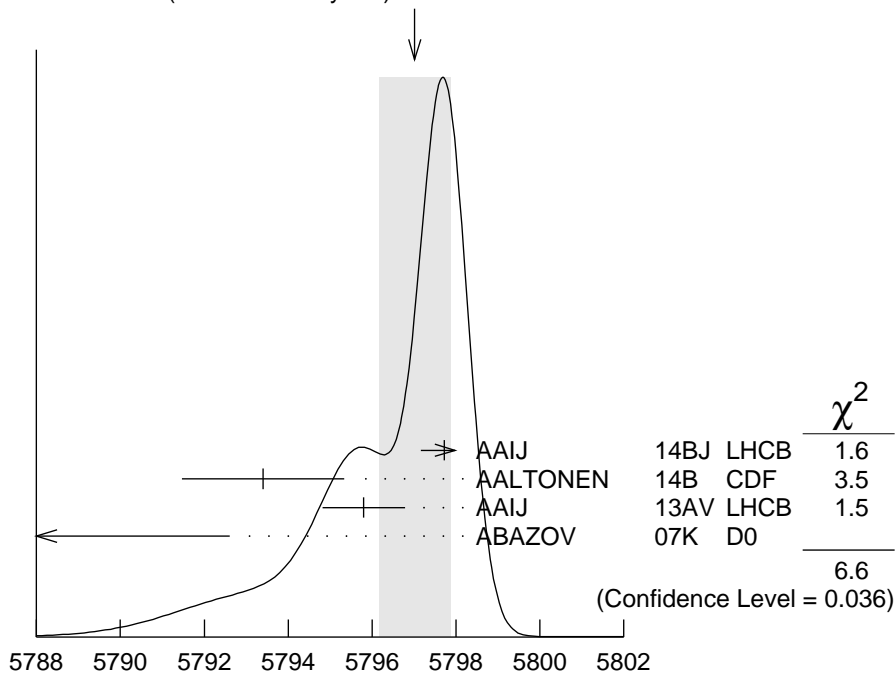
In the quark model, Ξ_b^0 and Ξ_b^- are an isodoublet (usb, dsb) state; the lowest Ξ_b^0 and Ξ_b^- ought to have $J^P = 1/2^+$. None of I, J , or P have actually been measured.

Ξ_b MASSES

Ξ_b^- MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
5797.0 ± 0.9 OUR AVERAGE	Error includes scale factor of 1.8. See the ideogram below.		
5797.72 ± 0.46 ± 0.31	1 AAIJ	14BJ LHCb	$p\bar{p}$ at 7, 8 TeV
5793.4 ± 1.8 ± 0.7	2 AALTONEN	14B CDF	$p\bar{p}$ at 1.96 TeV
5795.8 ± 0.9 ± 0.4	3 AAIJ	13AV LHCb	$p\bar{p}$ at 7 TeV
5774 ± 11 ± 15	4 ABAZOV	07K D0	$p\bar{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
5796.7 ± 5.1 ± 1.4	5 AALTONEN	11X CDF	Repl. by AALTONEN 14B
5790.9 ± 2.6 ± 0.8	6 AALTONEN	09AP CDF	Repl. by AALTONEN 14B
5792.9 ± 2.5 ± 1.7	7 AALTONEN	07A CDF	Repl. by AALTONEN 09AP

WEIGHTED AVERAGE
5797.0 ± 0.9 (Error scaled by 1.8)



Ξ_b^- MASS (MeV)

¹ Reconstructed in $\Xi_b^- \rightarrow \Xi_c^0 \pi^-, \Xi_c^0 \rightarrow p K^- K^- \pi^+$ decays. Reference Λ_b^0 mass 5619.30 ± 0.34 MeV from AAIJ 14AA.

² Uses $\Xi_b^- \rightarrow J/\psi \Xi^-$ and $\Xi_c^0 \pi^-$ decays.

³ Measured in $\Xi_b^- \rightarrow J/\psi \Xi^-$ decays.

⁴ Observed in $\Xi_b^- \rightarrow J/\psi \Xi^-$ decays with $15.2 \pm 4.4^{+1.9}_{-0.4}$ candidates, a significance of 5.5 sigma.

⁵ Measured in $\Xi_b^- \rightarrow \Xi_c^0 \pi^-$ with $25.8^{+5.5}_{-5.2}$ candidates.

⁶ Measured in $\Xi_b^- \rightarrow J/\psi \Xi^-$ decays with 66^{+14}_{-9} candidates.

⁷ Observed in $\Xi_b^- \rightarrow J/\psi \Xi^-$ decays with 17.5 ± 4.3 candidates, a significance of 7.7 sigma.

Ξ_b^0 MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
5791.9 ± 0.5 OUR AVERAGE			
5794.3 ± 2.4 ± 0.7	AAIJ	14H LHCb	pp at 7 TeV
5791.80 ± 0.39 ± 0.31	¹ AAIJ	14Z LHCb	pp at 7, 8 TeV
5788.7 ± 4.3 ± 1.4	² AALTONEN	14B CDF	$p\bar{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
5787.8 ± 5.0 ± 1.3	³ AALTONEN	11X CDF	Repl. by AALTONEN 14B

¹ Uses $\Xi_b^0 \rightarrow \Xi_c^+ \pi^-$ and $\Xi_c^+ \rightarrow p K^- \pi^+$ decays. The measurement comes from the mass difference of Ξ_b^0 and Λ_b^0 .

² Uses $\Xi_b^0 \rightarrow \Xi_c^+ \pi^-$ decays.

³ Measured in $\Xi_b^0 \rightarrow \Xi_c^+ \pi^-$ with $25.3^{+5.6}_{-5.4}$ candidates.

$m_{\Xi_b^-} - m_{\Lambda_b^0}$

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
177.5 ± 0.5 OUR AVERAGE	Error includes scale factor of 1.6.		
177.73 ± 0.33 ± 0.14	¹ AAIJ	17BE LHCb	pp at 7, 8 TeV
176.2 ± 0.9 ± 0.1	² AAIJ	13AV LHCb	pp at 7 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
177.08 ± 0.47 ± 0.16	³ AAIJ	17BE LHCb	pp at 7, 8 TeV
178.36 ± 0.46 ± 0.16	^{4,5} AAIJ	14BJ LHCb	pp at 7, 8 TeV

¹ Combination of the original statistically independent measurements of AAIJ 14BE and AAIJ 17BJ taking into account correlation between systematic uncertainties.

² Reconstructed in $\Xi_b^- \rightarrow J/\psi \Xi^-$ decays.

³ Reconstructed in $\Xi_b^- \rightarrow J/\psi \Lambda K^-$ decays. Reference decays $\Lambda_b^0 \rightarrow J/\psi \Lambda$ were used.

⁴ Reconstructed in $\Xi_b^- \rightarrow \Xi_c^0 \pi^-$, $\Xi_c^0 \rightarrow p K^- K^- \pi^+$ decays. Reference $\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^-$.

⁵ Combined with AAIJ 17BE.

$m_{\Xi_b^0} - m_{\Lambda_b^0}$

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
172.5 ± 0.4 OUR AVERAGE			
174.8 ± 2.4 ± 0.5	AAIJ	14H LHCb	pp at 7 TeV
172.44 ± 0.39 ± 0.17	¹ AAIJ	14Z LHCb	pp at 7, 8 TeV

¹ Uses $\Xi_b^0 \rightarrow \Xi_c^+ \pi^-$ and $\Xi_c^+ \rightarrow p K^- \pi^+$ decays.

$$m_{\Xi_b^-} - m_{\Xi_b^0}$$

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
5.9 ± 0.6 OUR AVERAGE			
5.92 ± 0.60 ± 0.23	¹ AAIJ	14BJ LHCb	$p\bar{p}$ at 7, 8 TeV
3.1 ± 5.6 ± 1.3	² AALTONEN	11X CDF	$p\bar{p}$ at 1.96 TeV
¹ Reconstructed in $\Xi_b^- \rightarrow \Xi_c^0 \pi^-$, $\Xi_c^0 \rightarrow p K^- K^- \pi^+$ decays. Uses $m(\Xi_b^0) - m(\Lambda_b^0) = 172.44 \pm 0.39 \pm 0.17$ MeV from AAIJ 14Z.			
² Derived from measurements in $\Xi_b^0 \rightarrow \Xi_c^+ \pi^-$ and $\Xi_b^- \rightarrow J/\psi \Xi^-$ from AALTONEN 09AP taking correlated systematic uncertainties into account.			

Ξ_b MEAN LIFE

“OUR EVALUATION” is an average using rescaled values of the data listed below. The average and rescaling were performed by the Heavy Flavor Averaging Group (HFLAV) and are described at <http://www.slac.stanford.edu/xorg/hflav/>. The averaging/rescaling procedure takes into account correlations between the measurements and asymmetric lifetime errors.

Ξ_b^- MEAN LIFE

VALUE (10^{-12} s)	DOCUMENT ID	TECN	COMMENT
1.572 ± 0.040 OUR EVALUATION			
1.57 ± 0.04 OUR AVERAGE	Error includes scale factor of 1.1.		
1.599 ± 0.041 ± 0.022	¹ AAIJ	14BJ LHCb	$p\bar{p}$ at 7, 8 TeV
1.55 $^{+0.10}_{-0.09}$ ± 0.03	² AAIJ	14T LHCb	$p\bar{p}$ at 7, 8 TeV
1.36 ± 0.15 ± 0.02	AALTONEN	14B CDF	$p\bar{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •			
1.56 $^{+0.27}_{-0.25}$ ± 0.02	³ AALTONEN	09AP CDF	Repl. by AALTONEN 14B
¹ Reconstructed in $\Xi_b^- \rightarrow \Xi_c^0 \pi^-$, $\Xi_c^0 \rightarrow p K^- K^- \pi^+$ decays. Reference Λ_b^0 lifetime $1.479 \pm 0.009 \pm 0.010$ ps from AAIJ 14U.			
² Measured in $\Xi_b^- \rightarrow J/\psi \Xi^-$ decays.			
³ Measured in $\Xi_b^- \rightarrow J/\psi \Xi^-$ decays with 66^{+14}_{-9} candidates.			

Ξ_b^0 MEAN LIFE

VALUE (10^{-12} s)	DOCUMENT ID	TECN	COMMENT
1.480 ± 0.030 OUR EVALUATION			
1.477 ± 0.026 ± 0.019	¹ AAIJ	14Z LHCb	$p\bar{p}$ at 7, 8 TeV
¹ Uses $\Xi_b^0 \rightarrow \Xi_c^+ \pi^-$ and $\Xi_c^+ \rightarrow p K^- \pi^+$ decays. The measurement comes from the value of relative lifetime of Ξ_b^0 to Λ_b^0 .			

Ξ_b MEAN LIFE

VALUE (10^{-12} s)	DOCUMENT ID	TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •			
1.48 $^{+0.40}_{-0.31}$ ± 0.12	¹ ABDALLAH	05C DLPH	$e^+ e^- \rightarrow Z^0$
1.35 $^{+0.37}_{-0.28}$ $^{+0.15}_{-0.17}$	² BUSKULIC	96T ALEP	$e^+ e^- \rightarrow Z$
1.5 $^{+0.7}_{-0.4}$ ± 0.3	³ ABREU	95V DLPH	Repl. by ABDALLAH 05C

¹ Used the decay length of Ξ^- accompanied by a lepton of the same sign.

² Excess $\Xi^- \ell^-$, impact parameters.

³ Excess $\Xi^- \ell^-$, decay lengths.

$\tau_{mix} (1/2\pi)$ times the oscillation period

VALUE (s)	DOCUMENT ID	TECN	COMMENT
$>13 \times 10^{-12}$	¹ AAIJ	17BH LHCB	pp at 7, 8 TeV
¹ Uses Ξ_b^{*-} and $\Xi_b^{\prime-}$ decays to $\Xi_b^0 \pi^-$, where $\Xi_b^0 \rightarrow \Xi_c^+ \pi^-$, $\Xi_c^+ \rightarrow p K^- \pi^+$.			

MEAN LIFE RATIOS

$\tau_{\Xi_b^-} / \tau_{\Lambda_b^0}$ mean life ratio

VALUE	DOCUMENT ID	TECN	COMMENT
$1.089 \pm 0.026 \pm 0.011$	¹ AAIJ	14BJ LHCB	pp at 7, 8 TeV
¹ Reconstructed in $\Xi_b^- \rightarrow \Xi_c^0 \pi^-$, $\Xi_c^0 \rightarrow p K^- K^- \pi^+$ decays. Reference $\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^-$.			

$\tau_{\Xi_b^-} / \tau_{\Xi_b^0}$ mean life ratio

VALUE	DOCUMENT ID	TECN	COMMENT
$1.083 \pm 0.032 \pm 0.016$	¹ AAIJ	14BJ LHCB	pp at 7, 8 TeV
¹ Reconstructed in $\Xi_b^- \rightarrow \Xi_c^0 \pi^-$, $\Xi_c^0 \rightarrow p K^- K^- \pi^+$ decays. Uses Ξ_b^0 measurements from AAIJ 14Z.			

Ξ_b DECAY MODES

Mode	Fraction (Γ_i/Γ)	Scale factor/ Confidence level
$\Gamma_1 \quad \Xi^- \ell^- \bar{\nu}_\ell X \times B(\bar{b} \rightarrow \Xi_b)$	$(3.9 \pm 1.2) \times 10^{-4}$	S=1.4
$\Gamma_2 \quad J/\psi \Xi^- \times B(b \rightarrow \Xi_b^-)$	$(1.02^{+0.26}_{-0.21}) \times 10^{-5}$	
$\Gamma_3 \quad J/\psi \Lambda K^- \times B(b \rightarrow \Xi_b^-)$	$(2.5 \pm 0.4) \times 10^{-6}$	
$\Gamma_4 \quad p D^0 K^- \times B(\bar{b} \rightarrow \Xi_b)$	$(1.8 \pm 0.6) \times 10^{-6}$	
$\Gamma_5 \quad p \bar{K}^0 \pi^- \times B(\bar{b} \rightarrow \Xi_b)/B(\bar{b} \rightarrow B^0)$	$< 1.6 \times 10^{-6}$	CL=90%
$\Gamma_6 \quad p K^0 K^- \times B(\bar{b} \rightarrow \Xi_b)/B(\bar{b} \rightarrow B^0)$	$< 1.1 \times 10^{-6}$	CL=90%
$\Gamma_7 \quad p K^- K^- \times B(\bar{b} \rightarrow \Xi_b)$	$(3.6 \pm 0.8) \times 10^{-8}$	
$\Gamma_8 \quad p K^- K^-$		
$\Gamma_9 \quad p \pi^- \pi^-$		
$\Gamma_{10} \quad p K^- \pi^-$		
$\Gamma_{11} \quad \Lambda \pi^+ \pi^- \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0)$	$< 1.7 \times 10^{-6}$	CL=90%
$\Gamma_{12} \quad \Lambda K^- \pi^+ \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0)$	$< 8 \times 10^{-7}$	CL=90%

Γ_{13}	$\Lambda K^+ K^- \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0)$	< 3	$\times 10^{-7}$	CL=90%
Γ_{14}	$\Lambda_c^+ K^- \times B(\bar{b} \rightarrow \Xi_b^-)$	(6 ± 4)	$\times 10^{-7}$	
Γ_{15}	$\Lambda_b^0 \pi^- \times B(b \rightarrow \Xi_b^-)/B(b \rightarrow \Lambda_b^0)$	(5.7 ± 2.0)	$\times 10^{-4}$	
Γ_{16}	$p K^- \pi^+ \pi^- \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0)$	(1.9 ± 0.4)	$\times 10^{-6}$	
Γ_{17}	$p K^- K^- \pi^+ \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0)$	(1.73 ± 0.32)	$\times 10^{-6}$	
Γ_{18}	$p K^- K^+ K^- \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0)$	(1.8 ± 1.0)	$\times 10^{-7}$	

Ξ_b BRANCHING RATIOS

$\Gamma(\Xi^- \ell^- \bar{\nu}_\ell X \times B(\bar{b} \rightarrow \Xi_b^-))/\Gamma_{\text{total}}$ Γ_1/Γ

<u>VALUE (units 10^{-4})</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
3.9 ± 1.2 OUR AVERAGE	Error includes scale factor of 1.4.		
$3.0 \pm 1.0 \pm 0.3$	ABDALLAH	05C DLPH	$e^+ e^- \rightarrow Z^0$
$5.4 \pm 1.1 \pm 0.8$	BUSKULIC	96T ALEP	Excess $\Xi^- \ell^-$ over $\Xi^- \ell^+$
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$5.9 \pm 2.1 \pm 1.0$	ABREU	95V DLPH	Repl. by ABDALLAH 05C

$\Gamma(J/\psi \Xi^- \times B(b \rightarrow \Xi_b^-))/\Gamma_{\text{total}}$ Γ_2/Γ

<u>VALUE (units 10^{-4})</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$0.102^{+0.026}_{-0.021}$ OUR AVERAGE			
$0.098^{+0.023}_{-0.016} \pm 0.014$	¹ AALTONEN	09AP CDF	$p\bar{p}$ at 1.96 TeV
$0.16 \pm 0.07 \pm 0.02$	² ABAZOV	07K D0	$p\bar{p}$ at 1.96 TeV

¹ AALTONEN 09AP reports $[\Gamma(\Xi_b^- \rightarrow J/\psi \Xi^- \times B(b \rightarrow \Xi_b^-))/\Gamma_{\text{total}}] / [B(\Lambda_b^0 \rightarrow J/\psi(1S)\Lambda \times B(b \rightarrow \Lambda_b^0))] = 0.167^{+0.037}_{-0.025} \pm 0.012$ which we multiply by our best value $B(\Lambda_b^0 \rightarrow J/\psi(1S)\Lambda \times B(b \rightarrow \Lambda_b^0)) = (5.8 \pm 0.8) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

² ABAZOV 07K reports $[\Gamma(\Xi_b^- \rightarrow J/\psi \Xi^- \times B(b \rightarrow \Xi_b^-))/\Gamma_{\text{total}}] / [B(\Lambda_b^0 \rightarrow J/\psi(1S)\Lambda \times B(b \rightarrow \Lambda_b^0))] = 0.28 \pm 0.09^{+0.09}_{-0.08}$ which we multiply by our best value $B(\Lambda_b^0 \rightarrow J/\psi(1S)\Lambda \times B(b \rightarrow \Lambda_b^0)) = (5.8 \pm 0.8) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best value.

$\Gamma(J/\psi \Lambda K^- \times B(b \rightarrow \Xi_b^-))/\Gamma_{\text{total}}$ Γ_3/Γ

<u>VALUE (units 10^{-6})</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$2.45 \pm 0.19 \pm 0.35$	^{1,2} AAIJ	17BE LHCB	$p p$ at 7 and 8 TeV

¹ AAIJ 17BE reports $[\Gamma(\Xi_b^- \rightarrow J/\psi \Lambda K^- \times B(b \rightarrow \Xi_b^-))/\Gamma_{\text{total}}] / [B(\Lambda_b^0 \rightarrow J/\psi(1S)\Lambda \times B(b \rightarrow \Lambda_b^0))] = (4.19 \pm 0.29 \pm 0.15) \times 10^{-2}$ which we multiply by our best value $B(\Lambda_b^0 \rightarrow J/\psi(1S)\Lambda \times B(b \rightarrow \Lambda_b^0)) = (5.8 \pm 0.8) \times 10^{-5}$. Our first

error is their experiment's error and our second error is the systematic error from using our best value.

² Integrated over the b -baryon transverse momentum $p_T < 25$ GeV and rapidity $2.0 < y < 4.5$.

$\Gamma(\rho D^0 K^- \times B(\bar{b} \rightarrow \Xi_b))/\Gamma_{\text{total}} \quad \Gamma_4/\Gamma$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$(1.8 \pm 0.4 \pm 0.4) \times 10^{-6}$		¹ AAIJ	14H LHCb	pp at 7 TeV

¹ AAIJ 14H reports $[\Gamma(\Xi_b \rightarrow \rho D^0 K^- \times B(\bar{b} \rightarrow \Xi_b))/\Gamma_{\text{total}}] / [B(\bar{b} \rightarrow b\text{-baryon})] / [B(\Lambda_b^0 \rightarrow \rho D^0 K^-)] = 0.44 \pm 0.09 \pm 0.06$ which we multiply by our best values $B(\bar{b} \rightarrow b\text{-baryon}) = (8.8 \pm 1.2) \times 10^{-2}$, $B(\Lambda_b^0 \rightarrow \rho D^0 K^-) = (4.6 \pm 0.8) \times 10^{-5}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.

$\Gamma(\rho \bar{K}^0 \pi^- \times B(\bar{b} \rightarrow \Xi_b)/B(\bar{b} \rightarrow B^0))/\Gamma_{\text{total}} \quad \Gamma_5/\Gamma$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$< 1.6 \times 10^{-6}$	90	AAIJ	14Q LHCb	pp at 7 TeV

$\Gamma(\rho K^0 K^- \times B(\bar{b} \rightarrow \Xi_b)/B(\bar{b} \rightarrow B^0))/\Gamma_{\text{total}} \quad \Gamma_6/\Gamma$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$< 1.1 \times 10^{-6}$	90	AAIJ	14Q LHCb	pp at 7 TeV

$\Gamma(\rho K^- K^- \times B(\bar{b} \rightarrow \Xi_b))/\Gamma_{\text{total}} \quad \Gamma_7/\Gamma$

VALUE (units 10^{-8})	CL%	DOCUMENT ID	TECN	COMMENT
$3.6 \pm 0.8 \pm 0.2$		¹ AAIJ	17F LHCb	pp at 7, 8 TeV

¹ AAIJ 17F reports $[\Gamma(\Xi_b \rightarrow \rho K^- K^- \times B(\bar{b} \rightarrow \Xi_b))/\Gamma_{\text{total}}] / [B(B^+ \rightarrow K^+ K^- K^+)] / [B(\bar{b} \rightarrow B^+)] = (2.65 \pm 0.35 \pm 0.47) \times 10^{-3}$ which we multiply by our best values $B(B^+ \rightarrow K^+ K^- K^+) = (3.40 \pm 0.14) \times 10^{-5}$, $B(\bar{b} \rightarrow B^+) = (40.5 \pm 0.6) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.

$\Gamma(\rho \pi^- \pi^-)/\Gamma(\rho K^- K^-) \quad \Gamma_9/\Gamma_8$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
< 0.56	90	¹ AAIJ	17F LHCb	pp at 7, 8 TeV

¹ Measures the ratio as $0.28 \pm 0.16 \pm 0.13$.

$\Gamma(\rho K^- \pi^-)/\Gamma(\rho K^- K^-) \quad \Gamma_{10}/\Gamma_8$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$0.98 \pm 0.27 \pm 0.09$		AAIJ	17F LHCb	pp at 7, 8 TeV

$\Gamma(\Lambda \pi^+ \pi^- \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0))/\Gamma_{\text{total}} \quad \Gamma_{11}/\Gamma$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$< 1.7 \times 10^{-6}$	90	AAIJ	16W LHCb	pp at 7, 8 TeV

$\Gamma(\Lambda K^- \pi^+ \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0))/\Gamma_{\text{total}} \quad \Gamma_{12}/\Gamma$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$< 0.8 \times 10^{-6}$	90	AAIJ	16W LHCb	pp at 7, 8 TeV

$$\Gamma(\Lambda_c^+ K^- \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0))/\Gamma_{\text{total}} \quad \Gamma_{13}/\Gamma$$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
$<0.3 \times 10^{-6}$	90	AAIJ	16W LHCB	pp at 7, 8 TeV

$$\Gamma(p K^- \pi^+ \pi^- \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0))/\Gamma_{\text{total}} \quad \Gamma_{16}/\Gamma$$

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
$1.91 \pm 0.35 \pm 0.18$	¹ AAIJ	18Q LHCB	pp at 7, 8 TeV

¹AAIJ 18Q reports $[\Gamma(\Xi_b \rightarrow p K^- \pi^+ \pi^- \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0))/\Gamma_{\text{total}}] / [B(\Lambda_c^+ \rightarrow p K^- \pi^+)] / [B(\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^-)] = (6.2 \pm 0.8 \pm 0.2 \pm 0.8) \times 10^{-3}$ which we multiply by our best values $B(\Lambda_c^+ \rightarrow p K^- \pi^+) = (6.28 \pm 0.32) \times 10^{-2}$, $B(\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^-) = (4.9 \pm 0.4) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.

$$\Gamma(p K^- K^- \pi^+ \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0))/\Gamma_{\text{total}} \quad \Gamma_{17}/\Gamma$$

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
$1.73 \pm 0.27 \pm 0.16$	¹ AAIJ	18Q LHCB	pp at 7, 8 TeV

¹AAIJ 18Q reports $[\Gamma(\Xi_b \rightarrow p K^- K^- \pi^+ \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0))/\Gamma_{\text{total}}] / [B(\Lambda_c^+ \rightarrow p K^- \pi^+)] / [B(\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^-)] = (5.6 \pm 0.6 \pm 0.4 \pm 0.5) \times 10^{-3}$ which we multiply by our best values $B(\Lambda_c^+ \rightarrow p K^- \pi^+) = (6.28 \pm 0.32) \times 10^{-2}$, $B(\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^-) = (4.9 \pm 0.4) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.

$$\Gamma(p K^- K^+ K^- \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0))/\Gamma_{\text{total}} \quad \Gamma_{18}/\Gamma$$

VALUE (units 10^{-6})	DOCUMENT ID	TECN	COMMENT
$0.18 \pm 0.09 \pm 0.02$	^{1,2} AAIJ	18Q LHCB	pp at 7, 8 TeV

¹AAIJ 18Q reports $[\Gamma(\Xi_b \rightarrow p K^- K^+ K^- \times B(b \rightarrow \Xi_b^0)/B(b \rightarrow \Lambda_b^0))/\Gamma_{\text{total}}] / [B(\Lambda_c^+ \rightarrow p K^- \pi^+)] / [B(\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^-)] = (0.57 \pm 0.28 \pm 0.08 \pm 0.10) \times 10^{-3}$ which we multiply by our best values $B(\Lambda_c^+ \rightarrow p K^- \pi^+) = (6.28 \pm 0.32) \times 10^{-2}$, $B(\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^-) = (4.9 \pm 0.4) \times 10^{-3}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.

²AAIJ 18Q sees excess with a significance of 2.3σ . Using $B(\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^-) = (0.430 \pm 0.036) \times 10^{-2}$ and $B(\Lambda_c^+ \rightarrow p K^- \pi^+) = (6.46 \pm 0.24) \times 10^{-2}$ the authors set two sided limit $[0.11-0.25]$ at 90% C.L.

$$\Gamma(\Lambda_c^+ K^- \times B(\bar{b} \rightarrow \Xi_b^-))/\Gamma(p D^0 K^- \times B(\bar{b} \rightarrow \Xi_b^-)) \quad \Gamma_{14}/\Gamma_4$$

VALUE	DOCUMENT ID	TECN	COMMENT
$0.36 \pm 0.19 \pm 0.02$	¹ AAIJ	14H LHCB	pp at 7 TeV

¹AAIJ 14H reports $[\Gamma(\Xi_b \rightarrow \Lambda_c^+ K^- \times B(\bar{b} \rightarrow \Xi_b^-))/\Gamma(\Xi_b \rightarrow p D^0 K^- \times B(\bar{b} \rightarrow \Xi_b^-))] \times [B(\Lambda_c^+ \rightarrow p K^- \pi^+)] / [B(D^0 \rightarrow K^- \pi^+)] = 0.57 \pm 0.22 \pm 0.21$ which we multiply or divide by our best values $B(\Lambda_c^+ \rightarrow p K^- \pi^+) = (6.28 \pm 0.32) \times 10^{-2}$, $B(D^0 \rightarrow K^- \pi^+) = (3.950 \pm 0.031) \times 10^{-2}$. Our first error is their experiment's error and our second error is the systematic error from using our best values.

$\Gamma(\Lambda_b^0 \pi^- \times B(b \rightarrow \Xi_b^-))/B(b \rightarrow \Lambda_b^0)/\Gamma_{\text{total}}$	Γ_{15}/Γ
VALUE (units 10^{-4})	DOCUMENT ID TECN COMMENT
$5.7 \pm 1.8^{+0.8}_{-0.9}$	¹ AAIJ 15BA LHCB <i>pp</i> at 7, 8 TeV

¹ A signal is reported with a significance of 3.2 standard deviations in the decay chain of $\Xi_b^- \rightarrow \Lambda_b^0 \pi^-$, $\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^-$, and $\Lambda_c^+ \rightarrow p K^- \pi^+$.

P AND CP VIOLATION

$a_P(\Xi_b^0 \rightarrow p K^- K^- \pi^+)$

Observable calculated as average of the triple products for Ξ_b^0 and Ξ_b^0 , which is sensitive to parity violation.

VALUE (%)	DOCUMENT ID TECN COMMENT
$-3.04 \pm 5.19 \pm 0.36$	¹ AAIJ 18AG LHCB <i>pp</i> at 7, 8 TeV

¹ Measured over full phase space of the decay.

$a_{CP}(\Xi_b^0 \rightarrow p K^- K^- \pi^+)$

Observable calculated as half of the difference between triple products for Ξ_b^0 and Ξ_b^0 , which is sensitive to *CP* violation.

VALUE (%)	DOCUMENT ID TECN COMMENT
$-3.58 \pm 5.19 \pm 0.36$	¹ AAIJ 18AG LHCB <i>pp</i> at 7, 8 TeV

¹ Measured over full phase space of the decay.

Ξ_b REFERENCES

AAIJ	18AG	JHEP 1808 039	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	18Q	JHEP 1802 098	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	17BE	PL B772 265	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	17BH	PRL 119 181807	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	17BJ	PRL 119 232001	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	17F	PRL 118 071801	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	16W	JHEP 1605 081	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	15BA	PRL 115 241801	R. Aaij <i>et al.</i>	(LHCb Collab.)
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AAIJ	14BE	NP B888 169	R. Aaij <i>et al.</i>	(LHCb Collab.)
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ABREU	95V	ZPHY C68 541	P. Abreu <i>et al.</i>	(DELPHI Collab.)