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Study of the Λ_b decay properties with the ATLAS experiment

The ATLAS detector at the LHC is collecting - among others - a large statistics of Λ_b decays, allowing the study of production, decay modes and decay properties of this b-flavored hadron. This statistics is what allowed one of the most precise measurements of the Λ_b lifetime. We will review ATLAS' latest results on the decay properties of this baryon, including new decay modes and measurement of the parity violating asymmetry parameter α_b in $\Lambda_b \rightarrow \Lambda J/\psi$ obtained from the study of angular correlations in the $p \pi^- \mu^+ \mu^-$ final state. The measurement is compared to predictions based on perturbative QCD and heavy quarks effective theory.

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