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First observation of Lb -> Lambda K+ pi- and Lambda K+ K- decays at LHCb

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The physics potential for b-baryon decays has been relatively untapped until the advent of the LHC, and as such important questions still exist of their fundamental properties, such as whether their decays exhibit CP violation. Presented here are observations of the decays $\Lambda_b^0 \to \Lambda K^+\pi^-$ and $\Lambda_b^0 \to \Lambda K^+K^-$, made at a significance level of 8.1 and 15.8 Gaussian standard deviations, respectively, and measurements of their branching fractions. The phase-space integrated CP asymmetries of these decays are also measured and found to be consistent with zero. Limits are set on the branching fractions of other Λ_b^0 and Ξ_b^0 decays to Λh^+h^- (where 'h' is a kaon or pion).

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