ID de Contribution: **10** Type: **Poster**

Search for the Lepton Universality Violation using b-baryons

Lepton universality is one of the most important ingredients of the Standard Model of particle physics (SM). It means that leptons (e.g., electrons and muons) behave in the same way, i.e., have the same couplings to gauge bosons.
Several tests of the Lepton universality were performed up to date. Two previous measurements of LHCb, R_K and R_Kstar, show signs of deviations from the SM predictions in the B-meson decays. The following measurements are needed to check whether these hints are really deviations from the SM, or rather statistical fluctuations.
One of the possibilities is to measure the Lepton universality using b-baryons.
Our goal is to measure R_Lambdastar which is the ratio of probablities that Lambda_b baryon decays to (Lambdastar mu mu) or to (Lambdastar e e).
Here, the outline of the analysis, as well as signal selection and background studies for the Lambda_b decays will be presented.

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