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Rare B decays at LHCb

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Rare decays are flavour changing neutral current processes that allow sensitive searches for phenomena beyond the Standard Model (SM).

In the SM, rare decays are loop-suppressed and new particles in SM extensions can give significant contributions.

The very rare decay $B_s \rightarrow \mu\mu$ is in addition helicity suppressed and constitutes a powerful probe for new (pseudo) scalar particles.

Of particular interest are furthermore tests of lepton universality in rare $b \rightarrow sll$ decays.

The LHCb experiment is designed for the study of b-hadron decays and ideally suited for the analysis of rare decays due to its high trigger efficiency, as well as excellent tracking and particle identification performance. Recent results from the LHCb experiment in the area of rare decays are presented, including tests of lepton universality and searches for lepton flavour violation.

Experimental Collaboration

LHCb

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Session Classification: Flavour and symmetries

Track Classification: Flavour Physics and Fundamental Symmetries