

# Allgemeines Physikalisches Kolloquium

Donnerstag, 08.07.2021 um 16 Uhr c.t.  
Online-Kolloquium

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## **With beautiful quarks to new phenomena in particle physics: recent results from the LHCb experiment**

Many rare decays of mesons with beauty and charm quarks (B and D-mesons) are strongly suppressed in the Standard Model and can only proceed via quantum-loops. Contributions from physics beyond the Standard Model at high mass scales could significantly alter the predicted quantum corrections and thus the decay properties of the heavy mesons. Rare beauty and charm meson decays are therefore excellent systems to search for new phenomena. They probe physics at mass scales much above the energies accessible at colliders.

The LHCb experiment is a dedicated experiment to study B and D-meson decays at the LHC and exploits the unprecedented production rate of these heavy hadrons in the high-energy proton-proton collisions of the LHC. Recent LHCb results for very rare processes with high sensitivity to new physics phenomena will be discussed. An emphasis is put on so called penguin decays for which differences to the Standard Model predictions have been observed for several channels.