Physikalisches Institut
Fakultät für Mathematik und Physik
Albert-Ludwigs-Universität Freiburg

PHYSIKALISCHES KOLLOQUIUM

AM 14. JULI 2025 UM 16 UHR C.T.
IM GROßEN HÖRSAAL

PRECISION MEASUREMENTS OF MATTER - ANTIMATTER DIFFERENCES WITH THE LHCB EXPERIMENT

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The observed matter – antimatter asymmetry in the universe requires violation of the charge (C) – parity (P) symmetry. CP violation is included in the Standard Model of particle physics; however, it is insufficient to explain the observed baryon asymmetry in the universe. Therefore, a new source of CP violation, beyond the Standard Model, is needed. As of now, 61 years after the first discovery of CP violation in neutral kaon decays, CP violation has been discovered also in beauty and charm meson decays, as well as in baryon decays.
In this colloquium I will discuss various approaches for searches of new sources of CP violation in heavy-flavour meson decays at the LHCb experiment at the Large Hadron Collider at CERN.

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