

Charm and beauty: Heavy quark physics from lattice QCD

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This is an excellent time to study heavy mesons that contain c and/or b quarks, as they are produced in abundance by B-factories and at LHCb. There are persistent discrepancies with Standard Model in the b to c semileptonic observables, for example the few-sigma anomalies in the so called R-ratios $R(D)$, $R(D^*)$ and $R(J/\psi)$ recently announced by LHCb. Reliable Standard Model predictions of these quantities are thus needed to be compared to experimental measurements.

Lattice QCD allows us to do a fully nonperturbative QCD calculation and study mesons and their semileptonic decays, providing high precision Standard Model predictions. In this talk I will focus on recent progress made by HPQCD Collaboration in determining the form factors related to these decays and the impact for phenomenology at LHCb and B-factories.

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