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Inclusive semileptonic decays of heavy mesons from lattice QCD

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A first-principles computation of the inclusive semi-leptonic decay rates of heavy mesons from lattice QCD has a great phenomenological relevance since the comparisons of the theoretical results with the corresponding experimental data allows for stringent Standard Model tests in the sector of Flavour physics. In this talk we present the first fully non-perturbative computation of the $D_s \rightarrow X \ell \nu$ decay rate and of the associated leptonic moments, carried out on state-of-the-art ETMC ensembles at the physical point with four lattice spacings and three volumes. The extraction of the relevant smeared spectral densities from Euclidean four-point correlation functions has been performed with controlled statistical and systematic uncertainties by using the Hansen-Lupo-Tantalo method. Additionally, we present preliminary results of our ongoing calculation of the inclusive semi-leptonic B mesons decay rates with focus on some important technical aspects of the calculation.

Parallel Session (for talks only)

Quark and lepton flavor physics

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