Contribution ID: **222** Type: **Talk**

Systematic effects in the lattice calculation of inclusive semileptonic decays

Thursday, 1 August 2024 12:10 (20 minutes)

We report on the nonperturbative calculation of the inclusive decay rate for semileptonic decays of the D_s meson from lattice QCD. In this talk we address systematic effects associated with the analysis. Namely, we focus on the systematic errors introduced by the finite polynomial order in the Chebyshev approximation used in the analysis and the error due to finite-volume effects. The former is estimated by a combination of the required limits and employing properties of the Chebyshev polynomials, while the latter is estimated by formulating a model under the assumption of two-body final states which is combined with the lattice data to extrapolate the infinite volume limit.

Primary author: KELLERMANN, Ryan (High Energy Accelerator Research Organization (KEK))

Co-authors: ELGAZIARI, Ahmed (University of Southampton); Dr BARONE, Alessandro (Johannes Gutenberg University Mainz); JUETTNER, Andreas (University of Southampton); HASHIMOTO, Shoji (KEK); KANEKO, Takashi (KEK); HU, Zhi (High Energy Accelerator Research Organization (KEK))

Presenter: KELLERMANN, Ryan (High Energy Accelerator Research Organization (KEK))

Session Classification: Quark and lepton flavour physics

Track Classification: Quark and Lepton Flavour Physics