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The role of long distance effects in Ds semileptonic decays, out of resonance.

Content

The D_s semileptonic decays provides an ideal scenario in the charm sector to search for Lepton number violation (LNV), Lepton flavor universality (LFU) tests and new contributions in Flavor changing neutral currents (FCNC) modes. In this work, we first describe the long distance (LD) contributions in the $D_s \to \pi l^+ l^-$ decay, a non-FCNC mode usually employed as normalization at the phi pole for other decay modes. Out of resonance searches requiere a description in the full dilepton invariant mass accounting for all possible uncertainties. Using a meson dominance description we fix the parameters in agreement with LHCb data. The interference with the short distance (SD) and uncertainties are determined. We also describe $D_s \to K l^+ l^-$ decay and compare the SD and LD contributions. Prospects for these modes for Belle II capabilities are explored.

Summary

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