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Form factors for the charm-baryon semileptonic decay $\Xi_c \rightarrow \Xi \ell \nu$ from domain-wall lattice QCD

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Recent experimental progress measuring the branching fractions of the heavy-baryon semileptonic decays $\Xi_c \rightarrow \Xi \ell \nu$ have stimulated theoretical interest and motivate precise lattice calculations of the form factors. Here we present such a calculation using domain-wall fermions for the up, down, and strange quarks, and an anisotropic clover action for the charm quark. We use four ensembles generated by the RBC and UKQCD collaborations, with lattice spacings between 0.111 and 0.073 fm and pion masses ranging from 420 to 230 MeV. Our preliminary results for the form factors are larger in magnitude than previous lattice results.

Topical area

Quark and Lepton Flavor Physics

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