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Semileptonic $D \to \pi\ell\nu$, $D \to K\ell\nu$ and $D_s \to K\ell\nu$ decays with 2+1f Domain Wall Fermions

Thursday 29 July 2021 14:30 (15 minutes)

We present the status of a project to calculate $D \to \pi\ell\nu$, $D \to K\ell\nu$ and $D_s \to K\ell\nu$ semileptonic form factors with 2+1f Domain Wall Fermions for both heavy and light quarks. We plan to cover the full kinematic range and three point functions are being computed on the RBC-UKQCD Iwasaki gauge ensembles. Given the exponential growth of noise, good projection on the ground state is critical for success. We include an analysis of operator diagonalisation within several possible 2×2 operator bases and find an admixture of gauged fixed wall and $\mathbb{Z}(2)$ wall sources to be acceptable at both zero and non-zero momentum. Initial results for semileptonic form factors are presented for first ensembles.

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