D meson semileptonic form factors at zero momentum transfer in 2+1+1 flavor lattice QCD

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We present a calculation of the $D \rightarrow$
K, l, ν and $D \rightarrow \pi, l, \nu$ semileptonic form factors at $q^2 = 0$.
These form factors are needed for the determination of the CKM matrix elements
$lvertV_{cs}$
$rvert$ and

$lvertV_{cd}$
$rvert$ respectively.
This work uses the HISQ action for both valence quarks and sea quarks on MILC $N_f = 2+1+1$ configurations, with ensembles including several at the physical pion mass and lattice spacings ranging from $0.12fm$ to $0.042fm$.
The calculation employs twisted boundary conditions to calculate the form factors at zero momentum transfer directly.
We use HMχPT to obtain preliminary results at the physical point and in the continuum limit.

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