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Hypercubic effects in semileptonic $D \to \pi$ decays on the lattice

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We present lattice results of the form factors relevant for semileptonic $D \to \pi\ell\nu$ decays, using the gauge ensembles produced by the European Twisted Mass Collaboration with Nf=2+1+1 flavors of dynamical quarks, at three values of the lattice spacing and pion masses as low as 210 MeV.
We have computed the matrix elements of both the vector and scalar weak currents for several kinematic configurations corresponding to moving parent and child mesons. The lattice data exhibit the presence of hypercubic effects. Our preliminary results for the momentum dependence of the form factors and for the vector form factor at zero-momentum transfer, f+(0), are obtained by removing such lattice effects.

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