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Towards precision lattice determination of semileptonic $D \rightarrow \pi \ell \nu$, $D \rightarrow K \ell \nu$ and $D_s \rightarrow K \ell \nu$ decay form factors

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CKM matrix elements can be obtained from lattice determinations of semileptonic decay form factors by combining them with experimental results for decay rates. We give a status update on our study using the Domain Wall Fermion action for up/down, strange and charm quarks to determine semileptonic form factors for $D \rightarrow \pi \ell \nu$, $D \rightarrow K \ell \nu$ and $D_s \rightarrow K \ell \nu$ decays. Data have been produced on three lattice spacings and pion masses in the range 250 Mev to 400 Mev, and preliminary form factor data are presented. These will subsequently be included in a global fit.

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