

## **D to K semileptonic decay from $n_f = 2 + 1 + 1$ lattice QCD with physical light quarks**

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We present our (HPQCD) latest lattice QCD calculation of the scalar and the vector form factors for the  $D \rightarrow K\ell\nu$  semi-leptonic decay over a full range of  $q^2$  including  $q^2 = 0$ . This calculation has been performed on the  $N_f=2+1+1$  MILC HISQ ensembles with the physical and heavier than physical light quark masses. This calculation allows us to precisely determine the central CKM matrix element,  $V_{cs}$  in the Standard Model, by comparing the lattice QCD results for the form factors and the experimental decay rate.

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