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B-meson semileptonic decays with highly improved staggered quarks

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We present new results on heavy meson semileptonic decays using the highly improved staggered quark (HISQ) action for both valence and 2+1+1 sea quarks. The use of the highly improved action, combined with the MILC collaboration's gauge ensembles with lattice spacings down to ~0.042 fm, allows the b quark to be treated with the same discretization as the lighter quarks. This unified treatment of the valence quarks allows for absolutely normalized currents (in some cases), bypassing the need for perturbative matching, which is a leading source of uncertainty in previous Fermilab/MILC calculations of B-meson decay form factors.

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