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Decay constants f_B and f_{B_s} and quark masses m_b and m_c from HISQ simulations

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We present high-precision results for the decay constants f_B and f_{B_s} from simulations with HISQ heavy and light valence and sea quarks. Calculations are carried out with several heavy valence-quark masses on ensembles with 2+1+1 flavors of HISQ sea quarks. We generate data at five lattice spacings with three light sea quark mass ratios, including an approximately physical ensemble at every lattice spacing. This range of parameters provides excellent control of the continuum limit and of heavy-quark discretization errors. In addition to the decay constants, we present results for charm- and bottom-quark masses extracted from heavy-light meson masses using an approach based on HQET.

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