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Implementation of a non-perturbative matching strategy between heavy-light currents in HQET and QCD

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We outline our strategy to non-perturbatively match all components of the heavy-light axial and vector currents in Heavy Quark Effective Theory (HQET) at O(1/m) to finite-volume lattice QCD. Based on a tree-level study, we propose a set of matching conditions between suitable observables defined in QCD and HQET to fix the parameters of the effective theory, which are required to absorb the power divergences of lattice HQET. These conditions can be evaluated through numerical simulations, and we report on the status of our implementation in two-flavour QCD. The results of this finite-volume matching strategy will enter a HQET computation of the form factors of semi-leptonic B$\longrightarrow\pi$ decays as a first application.

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