The scalar B meson in the static limit of HQET

Wednesday, 25 June 2014 09:00 (20 minutes)

I will present results on the scalar B meson ($B^0_s$) sector using $N_f = 2\mathcal{O}(a)$-improved Wilson-Clover fermions and the Heavy Quark Effective Field theory at the static limit to describe the b-quark. Since the scalar B meson lies near the $B\pi$ threshold for our simulations set-up, we have implemented meson-meson as well as quark-antiquarks interpolating fields to disentangle the scalar B meson from the two particles states. Using the Generalized Eigenvalue Problem on the full basis, we are able to separate the two levels. Then, we compute the scalar B meson decay constant and the couplings $h$ which parametrizes the Heavy Meson Chiral Perturbation Theory Lagrangian, more precisely the transitions between the $1/2^+$ and $1/2^-$ heavy-light mesons doublets. The couplings $h$ may play a role in the chiral extrapolations when taking the nearest orbital excitations into account in chiral loops.

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