The 38th International Symposium on Lattice Field Theory

LATTICE 21

JULY 26-30 2021, ZOOM/GATHER@MIT

Contribution ID: **231** Type: **Oral presentation**

Precision $B^*B\pi$ coupling from three flavor lattice QCD

Thursday, 29 July 2021 13:00 (15 minutes)

We consider three-flavor QCD and perform a determination of the low energy coupling $\hat{g}$ of SU(2) Heavy Meson Chiral Perturbation Theory. It is the $B^*B\pi$ coupling in the limit of static heavy and chiral *light* quarks in $N_\mathrm{f} = 2 + 1$ flavor QCD and has not been determined with precision thus far. The calculation is performed on the $2 + 1$ flavor CLS ensembles using the summed GEVP method.
The extrapolation to the limit of chiral light quarks is based on a number of gauge ensembles with pion masses in the range from 420 MeV down to 130 MeV. This allows us to significantly reduce the systematic uncertainty from the extrapolation compared to previous works. Only a weak dependence on the lattice spacing is visible in our results.
This work is a first step in the $2 + 1$ flavor HQET program of the ALPHA collaboration.

Primary authors: GÉRARDIN, Antoine (CPT Marseille); Mr KUBERSKI, Simon (Helmholtz-Institut Mainz); HEITGER, Jochen (University of Münster, ITP); SOMMER, Rainer Paul (DESY)

Presenter: Mr KUBERSKI, Simon (Helmholtz-Institut Mainz)

Session Classification: Standard Model Parameters

Track Classification: Standard Model Parameters