



Contribution ID: 456

Type: Talk

## Beautiful exotics in a non-perturbatively tuned Lattice NRQCD setup

*Tuesday, 30 July 2024 13:45 (20 minutes)*

We present a calculation of exotic tetraquark states with two  $\bar{b}$ -quarks and of the lowest-energy  $J^P = 0^+$  and  $1^+$   $B_s$ -mesons using Lattice NRQCD. The calculations have been performed on the  $N_f = 2 + 1$  Wilson-Clover gauge-field configurations from the CLS consortium. For the  $ud\bar{b}\bar{b}$  and  $us\bar{b}\bar{b}$  tetraquarks we obtain bound states below the respective  $BB^*$  and  $B_s B^*$  thresholds, which we compare to other Lattice QCD determinations. For the b-quark cousins of the  $D_{s0}^*(2317)$  and  $D_{s1}(2460)$  we obtain predictions with a better precision and better controlled systematic uncertainty than previous lattice QCD calculations. Overall our uncertainties are dominated by systematics and we outline future steps to remedy this.

**Primary authors:** MOHLER, Daniel (TU Darmstadt); HUDSPITH, Renwick (York University)

**Presenter:** MOHLER, Daniel (TU Darmstadt)

**Session Classification:** Hadronic and nuclear spectrum and interactions

**Track Classification:** Hadronic and Nuclear Spectrum and Interactions