Contribution ID: **13** Type: **Invited talk**

Bound States and Resonances in Doubly Heavy Tetraquark States

Thursday, 20 April 2023 14:30 (30 minutes)

I will give an update on our work studying antiheavy-antiheavy-light-light four-quark states using lattice QCD. We consider the three different tetraquark candidates $\bar{b}\bar{b}ud$, $\bar{b}\bar{b}us$ and $\bar{b}\bar{c}ud$ and search for possible existing bound states or resonances in all channels. In addition to commonly used local interpolating operators we also employ scattering interpolating operators, which seem to be very important for an accurate extraction of possibly existing bound states as well as low-lying scattering states.
Moreover, we investigate the effects of the finite lattice volume by performing a scattering analysis using Luscher's method. We extract infinite volume quantities like scattering lengths and phase shifts to obtain reliable statements about infinite volume binding energies.

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