



Contribution ID: 334

Type: **Talk**

Heavy and light spectroscopy near the physical point, Part II: Tetraquarks

Monday, July 25, 2016 2:35 PM (20 minutes)

Having introduced the ensembles and basic spectrum in Part I, we focus on results for a doubly heavy tetraquark candidate, $qq\bar{Q}\bar{Q}$. Based on phenomenological observations regarding heavy baryon systems, we motivate two possible lattice interpolating operators: a diquark-anti diquark and a meson-meson. We show these operators exhibit good behaviour both in terms of lattice QCD and their phenomenological interpretation. In particular we study the $qq\bar{b}\bar{b}$, $qq\bar{c}\bar{b}$ and $qq\bar{c}\bar{c}$ with $qq = ud, us$ flavor combinations and analyze their binding. In the chiral limit, at finite lattice spacing, we find strong indications for binding of the $qq = ud$ tetraquark candidates. We comment on possible search windows for experimental confirmation.

Primary authors: Dr FRANCIS, Anthony (York University); MALTMAN, Kim (York University); LEWIS, Randy (York University); Dr HUDSPITH, Renwick J. (York University)

Presenter: Dr FRANCIS, Anthony (York University)

Session Classification: Hadron Spectroscopy and Interactions

Track Classification: Hadron Spectroscopy and Interactions