



Contribution ID: 305

Type: **Talk**

Search for a bound H-dibaryon using local six-quark interpolating operators

Wednesday, 25 June 2014 12:30 (20 minutes)

Early results will be presented from a Lattice QCD study seeking a bound H-dibaryon using $N_f=2$ flavors of $O(a)$ improved Wilson fermions and a quenched strange quark. We solve the generalized eigenvalue problem constructed using a variational basis of interpolators consisting of the two independent local products of six positive-parity-projected quarks with the appropriate quantum numbers, which belong to the singlet and 27-plet irreducible representations of flavor $SU(3)$. To expand this basis, we also independently vary the quark-field smearing. We employ a “blocking” algorithm for the contractions and all-mode-averaging in order to achieve high performance and large statistics. Results will be presented for at least two different pion masses.

Primary author: Dr GREEN, Jeremy (Institut für Kernphysik, Johannes Gutenberg-Universität Mainz)

Co-authors: Dr FRANCIS, Anthony (Helmholtz-Institut Mainz, Johannes Gutenberg-Universität Mainz); Dr MIAO, Chuan (Helmholtz-Institut Mainz, Johannes Gutenberg-Universität Mainz); Prof. WITTIG, Hartmut (Helmholtz-Institut Mainz, Institut für Kernphysik, and PRISMA Cluster of Excellence, Johannes Gutenberg-Universität Mainz); Dr JUNNARKAR, Parikshit (Helmholtz-Institut Mainz, Johannes Gutenberg-Universität Mainz); Dr RAE, Thomas (Institut für Kernphysik, Johannes Gutenberg-Universität Mainz)

Presenter: Dr GREEN, Jeremy (Institut für Kernphysik, Johannes Gutenberg-Universität Mainz)

Session Classification: Hadron spectroscopy and interaction

Track Classification: Hadron Spectroscopy and Interactions