

Contribution ID: 526 Type: not specified

Born-Oppenheimer Potentials for Double-Heavy Hadrons

Tuesday 14 May 2024 17:15 (15 minutes)

Double-heavy hadrons can be identified as bound states in the Born-Oppenheimer potentials for QCD. We present parameterizations of the 5 lowest Born-Oppenheimer potentials from pure SU(3) lattice gauge theory as functions of the separation r of the static quark and antiquark sources. The parametrizations have the correct limiting behavior at small r, where the potentials form multiplets associated with gluelumps. They also have the correct limiting behavior at large r, where the potentials form multiplets associated with excitations of a relativistic string. These Born-Oppenheimer potentials can be used to develop models based on QCD for the many exotic heavy hadrons that have been discovered since 2003.

Mini Symposia (Invited Talks Only)

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Presenter: Mr ALASIRI, Fareed (Ohio State University) **Session Classification:** QCD & Heavy Ion Physics

Track Classification: QCD & Heavy Ion Physics