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Born-Oppenheimer Potentials for Double-Heavy Hadrons

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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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