

Abstract Submitted  
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**Tetraquark bound states in the heavy-light heavy-light system**

ZACHARY BROWN, KOSTAS ORGINOS, The College of William & Mary — A calculation of the interaction potential of two heavy-light mesons in lattice QCD is used to study the existence of tetraquark bound states. The interaction potential of the tetraquark system is calculated on the lattice with 2+1 flavours of dynamical fermions with lattice interpolating fields constructed using *colorwave* propagators. These propagators provide a method for constructing all-to-all spatially smeared the interpolating fields, a technique which allows for a better overlap with the ground state wavefunction as well as reduced statistical noise. Potentials are extracted for 24 distinct channels, and are fit with a phenomenological non-relativistic quark model potential, from which a determination of the existence of bound states is made via numerical solution of the two body radial Schrödinger equation.

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