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The H-dibaryon in two flavor lattice QCD

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We present preliminary results from a lattice QCD calculation of the H-dibaryon using two flavors of O(a) improved Wilson fermions. We employ six quark interpolating operators with the appropriate quantum numbers of the H-dibaryon and also explore its couplings to two-baryon channels. We apply two smearings to improve the overlap to the ground state, which is obtained by solving a generalised eigenvalue problem. The inclusion of multi-particle operators enables the application of Luescher's finite volume formalism to obtain information on the nature of the infinite volume interaction of two particles. Further, the correlators are projected to three moving frames enabling the isolation of the infinite volume bound/scattering state. Preliminary results on pion mass of 1GeV indicate the H-dibaryon is bound in the infinite volume. Results at a lower pion mass of 451 MeV will also be presented.

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