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Lattice QCD Investigation of Doubly Bottom and Bottom-Strange Tetraquarks in the Isoscalar Channel

Monday 3 November 2025 18:00 (20 minutes)

We present our recent investigation on doubly bottom and bottom-strange tetraquarks in the isoscalar channel in search of a possible tetraquark bound state. The calculations are performed on four ensembles with dynamical quark fields up to the charm quark generated by the MILC Collaboration with various lattice spacings. Multiple volumes have been used to account for finite volume effects. Overlap action has been used to calculate light and strange quark propagators. Finite volume energy has been calculated using the variational method followed by rigorous scattering amplitude analysis calculation *à la* Lüscher. We find strong evidence for a deeply bound state in the doubly bottom tetraquark channel, but no conclusive evidence for the existence of a bottom–strange tetraquark.

Parallel Session (for talks only)

Hadronic and nuclear spectrum and interactions

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