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Preliminary study of the H dibaryon in $N_f = 2 + 1$ lattice QCD

Friday 7 November 2025 14:50 (20 minutes)

We present preliminary results on the $I = 0$, $S = -2$ H dibaryon in $N_f = 2 + 1$ QCD. The calculation is performed with heavier-than-physical quarks ($m_\pi \approx 280$ MeV) on a single CLS ensemble. Correlation matrices are constructed using the distillation technique and the three relevant channels, $\Lambda\Lambda$, $N\Xi$, $\Sigma\Sigma$, are investigated to determine the interacting spectrum relevant for S-wave across multiple momentum frames. The scattering amplitude is investigated by solving the corresponding two-body quantization condition. These preliminary results are part of the ongoing efforts to determine the properties of hyperons and to establish whether a bound H dibaryon exists down to physical quark masses.

Parallel Session (for talks only)

Hadronic and nuclear spectrum and interactions

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