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Precisely determining the ground state mass of Spin-3/2 Ω_{ccc} baryon from Lattice QCD

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We present the most precise determination to date of the ground-state masses of the triply charmed baryons with both parities, obtained by continuum extrapolation from two complementary lattice setups and thus fully addressing the systematic uncertainties. The calculations are performed on six $N_f = 2 + 1 + 1$ HISQ ensembles generated by the MILC collaboration. In the valence sector we use HISQ fermions as well as overlap fermions. Our prediction for the mass of the lowest two triply charmed spin-3/2 baryons are: $M_{\Omega_{ccc}}(3/2^+) = 4793(5) \left({}^{+11}_{-8} \right)$ MeV, and $M_{\Omega_{ccc}}(3/2^-) = 5094(12) \left({}^{+19}_{-17} \right)$ MeV.

Parallel Session (for talks only)

Hadronic and nuclear spectrum and interactions

Authors: DHINDSA, Navdeep Singh (Tata Institute of Fundamental Research, Mumbai); CHAKRABORTY, Debsubhra (Tata Institute of Fundamental Research, Mumbai); RADHAKRISHNAN, Archana (Tata Institute of Fundamental Research, Mumbai); MATHUR, Nilmani (Tata Institute of Fundamental Research, Mumbai); Dr PADMANATH, M. (The Institute of Mathematical Sciences Chennai)

Presenter: DHINDSA, Navdeep Singh (Tata Institute of Fundamental Research, Mumbai)

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