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Exploring Single-Flavor Dibaryons: A lattice perspective

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We present a lattice calculation of dibaryons composed of single-flavor quarks, specifically focusing on baryons made up of either charm or strange quarks. We utilize various set of lattice QCD ensembles with $N_f = 2+1+1$ dynamical HISQ fields, two spatial volumes, and three different lattice spacings generated by MILC collaboration. By using an overlap action for the valence charm and strange quark propagators, we calculate the ground state energies of dibaryons consisting of either two Ω_{ccc} or two Ω_{sss} baryons, in both the $S = 0$ and $S = 2$ channels. By analyzing the energy difference between the ground state of the dibaryon and the respective non-interacting baryons, we provide insights into the interactions involved in different spin channels.

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