



Nuclear Theory

Mass of the H-dibaryon

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Recent lattice QCD calculations have reported evidence for the existence of a bound state with strangeness -2 and baryon number 2 at quark masses somewhat higher than the physical values. By developing a description of the dependence of this binding energy on the up, down and strange quark masses that allows a controlled chiral extrapolation, we explore the hypothesis that this state is to be identified with the $\$H\$$ -dibaryon. Taking as input the recent results of the HAL and NPLQCD Collaborations, we show that the $\$H\$$ -dibaryon is likely to be unbound by $\$13 \pm 14\$$ MeV at the physical point.

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