

Lattice QCD survey of spectroscopy and hadron interactions

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One of the interesting subjects in hadron spectroscopy is to look for the multiquark configurations. One of candidates is the H-dibaryon ($udsuds$), and the possibility of the bound H-dibaryon has been recently studied from lattice QCD.

We also extend the HAL QCD method to define potential on the lattice between baryons to meson systems including charm quarks to search for the bound tetraquark T_{cc} ($ud\bar{c}\bar{c}$) and T_{cs} ($ud\bar{c}\bar{s}$). In the presentation, after reviewing the HAL QCD method, we report the results on the H-dibaryon, the tetraquark T_{cc} ($ud\bar{c}\bar{c}$) and T_{cs} ($ud\bar{c}\bar{s}$), where we have employed the relativistic heavy quark action to treat the charm quark dynamics with pion masses, $m_{\pi}=410, 570, 700$ MeV.

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