

Charmed baryon spectrum in 2+1-flavor Lattice QCD

Friday, July 27, 2018 2:40 PM (20 minutes)

We calculate the spectrum of charmed baryons on $32^3 \times 64$, 2 + 1-flavor lattice QCD ensembles generated by the PACS-CS Collaboration. Calculations are done with almost physical light quarks, $m_\pi \sim 156$ MeV, and physical strange and charm quarks. A relativistic heavy-quark action is used for valance charm quarks to suppress the systematic errors. A two-fold variational analysis is employed in order to access the excited states by varying the interpolating operators and smearing parameters independently. In this talk, we report on the details and status of the current calculations and present some preliminary results for positive and negative parity, spin-1/2 and spin-3/2 states.

Primary author: Dr CAN, Utku (RIKEN)

Co-authors: Prof. ERKOL, Guray (Ozyegin University); Dr BAHTIYAR, Huseyin (Mimar Sinan Guzel Sanatlar Universitesi); Prof. OKA, Makoto (JAEA-ASRC); Dr GUBLER, Philipp (JAEA-ASRC); Dr TAKAHASHI, Toru T. (Gunma College of Technology)

Presenter: Dr CAN, Utku (RIKEN)

Session Classification: Hadron Spectroscopy and Interactions

Track Classification: Hadron Spectroscopy and Interactions