820th ASRC Seminar

Date: July 4 (Mon), 14:00 ～ 16:00
Location: Online seminar by Zoom
Speaker: Mr. Yan Lyu
(School of Physics, Peking University; iTHEMS, RIKEN)
Title: *N-ϕ* interaction and "most charming dibaryon" from lattice QCD

Abstract:

As a fundamental theory of strong interaction, QCD governs not only the interaction among quarks and gluons but also the interaction between color-neutral hadrons. In recent years, lattice QCD has made significant progresses in accurate determination of hadron-hadron interactions from QCD. In terms of lattice calculation, hadronic systems containing strange quark and/or charm quark usually have clearer signal, at the same time these systems are also relatively little known to us due to limited experimental results. In this talk, I will show two typical examples, N-φ system and Ω_ccc-Ω_ccc system. For the former, its interaction is shown to have a two-pion exchange tail at long range, and for the latter, a bound state, dubbed as ``most charming dibaryon'', is predicted to exist under the strong interaction.

References

[1] Y. Lyu, T. Doi, T. Hatsuda, Y. Ikeda, J. Meng, K. Sasaki, T. Sugiura, Attractive *N-ϕ* Interaction and Two-Pion Tail from Lattice QCD near Physical Point, arXiv: 2205.10544 [hep-lat].

[2] Y. Lyu, H. Tong, T. Sugiura, S. Aoki, T. Doi, T. Hatsuda, J. Meng, and T. Miyamoto, Optimized two-baryon operators in lattice QCD, Phys. Rev. D 105, 074512 (2022).

[3] Y. Lyu, H. Tong, T. Sugiura, S. Aoki, T. Doi, T. Hatsuda, J. Meng, and T. Miyamoto, Dibaryon with Highest Charm Number near Unitarity from Lattice QCD, Phys. Rev. Lett. 127, 072003 (2021).

＜Contact＞

Gubler Philipp(81-5477)
Please email Mr.Gubler (gubler@post.j-parc.jp) for Zoom URL

Advanced Science Research Center