

独立行政法人理化学研究所 仁科加速器研究センター 第158回 RIBF核物理セミナー RIKEN Nishina Center for Accelerator Based Science The 158th RIBF Nuclear Physics Seminar

Lattice QCD studies for two- and three-nucleon forces

Dr. Takumi Doi (Quantum Hadron Physics Laboratory, RIKEN Nishina Center)

One of the most important challenges in nuclear and particle physics is to determine nuclear potentials directly from the underlying theory, QCD.

Recently, a novel framework has been proposed, in which nuclear forces can be determined in lattice QCD, utilizing the Nambu-Bethe-Salpeter (NBS) wave functions.

In my talk, I will review recent developments of this method (HAL QCD method), including the applications to the hyperon forces.

In particular, the extension to the three-nucleon forces is presented, and important implications on astrophysics are discussed.

Future prospects in the K computer era are also given.

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Contact: Nuclear Physics Seminar Organizing Committee npsoc@ribf.riken.jp http://ribf.riken.jp/~seminar/