



国立研究開発法人理化学研究所 仁科加速器研究センター  
第269回 RIBF核物理セミナー  
RIKEN Nishina Center for Accelerator Based Science  
The 269th RIBF Nuclear Physics Seminar

## Chiral EFT and the three-nucleon force problem

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Three-nucleon forces constitute an important frontier in nuclear physics. They play a significant role in theoretical studies of nuclear structure and reactions [1,2], the equation of states for nuclear matter and ongoing efforts towards uncovering the limits of stability of atomic nuclei. I will discuss the general structure of the three-nucleon force [3], review the ongoing work towards deriving three-nucleon forces in chiral EFT, see [4] and references therein, and consider selected applications [5].

- [1] N. Kalantar-Nayestanaki, E. Epelbaum, J.G. Messchendorp, A. Nogga, Rept. Prog. Phys. 75 (2012) 016301.
- [2] H.-W. Hammer, A. Nogga, A. Schwenk, Rev. Mod. Phys. 85 (2013) 197.
- [3] E. Epelbaum, A. Gasparyan, H. Krebs, C. Schat, Eur. Phys. J. A51 (2015) 26.
- [4] H. Krebs, A. Gasparyan, E. Epelbaum, Phys. Rev. C98 (2018) 014003.
- [5] E. Epelbaum et al., arXiv:1807.02848 [nucl-th], to appear in Phys. Rev. C.

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**RIBF Hall, RIBF bldg., RIKEN**

\* The talk will be given in English language.

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