乞掲示

理化学研究所原子核グループコロキウム　*2003. 8. 8*

講師 ： **Prof. Henryk Witała**

(Jagellonian University, Krakow, Poland)

題目 ： Testing nuclear Hamiltonian with 3N hadronic and electromagnetic processes

∗ The seminar will be given in *English.*

日時 ： 2003年 8月 8日 (Fri.)　16:00 –

場所 ： RIKEN Main Bldg. 2F Seminar Room

Abstract

In the talk the overview of present state of three-nucleon system study will be given. After discussing bound state results the processes in the three-nucleon continuum: elastic nucleon-deuteron scattering and the deuteron breakup reaction, will be considered and theoretical predictions for different observables with modern nucleon-nucleon interactions and present day three-nucleon forces will be presented and compared to experimental data. Application to electromagnetic reactions on three-nucleon bound states (^{3}He and ^{3}H), leading to their two- and three-body disintegration, will be discussed. The presented results for photodisintegration will prove, that this reaction is complementary to 3N continuum for testing present day 3N forces and, in addition, provide information on the electromagnetic current operator. Drawbacks of meson-exchange picture to derive nuclear forces will be discussed and chiral perturbation theory approach to nuclear forces presented. Results for 3N continuum with chiral two- and three-nucleon forces in next-to-next-to-leading order will be shown. Open questions and future challenges will be summarized.

∗ Host researcher : K. Sekiguchi (RIKEN)

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