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### **Few Nucleon Scattering and Three Nucleon Force**

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One recent topic of the few-nucleon system studies to explore the properties of three nucleon forces (3NFs) that appear in the system more than two nucleons. The 3NFs arise naturally in the standard meson exchange picture as well as in the more recent concept of chiral effective field theory. These forces are considered to be one key element to understand the nuclear phenomena in a consistent way. However there had been little knowledge with which to constrain the 3NFs. That is due to the fact that 3NFs are relatively weak compared to the nucleon–nucleon (NN) forces and then their effects are easily masked. Few nucleon scattering is one of the most promising tool for the 3NF study, because this system provides a rich set of energy dependent spin observables and differential cross sections. In the end of 1990's two theory groups reported the rigorous numerical Faddeev calculations incorporating  $2\pi$ -exchange 3NFs in elastic  $Nd$  scattering at intermediate energies ( $E/A \sim 100$  MeV), and they suggested that the difference found in the cross section minima is the signature of 3NF effects. Since then experimental studies of intermediate-energy  $pd/nd$  elastic scattering and  $pd$  breakup reactions have been performed by groups at RIKEN, RCNP, KVI, IUCF and Uppsala. Theoretically addition of 3NFs other than  $2\pi$  exchange types, and/or relativistic treatment, and completely new approach based on chiral effective field theory are now in progress. The importance of 3NFs has also been noted in other instances; e.g. descriptions of the binding energies of light mass nuclei and the empirical saturation point of symmetric nuclear matter. It is clear that the testing of 3NF models has just begun. In the presentation, recent progress in the 3NF study with few nucleon scattering at intermediate energies will be given.