Measurement of A_y for the *dp* breakup reaction at 250 MeV

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The study of three-nucleon force (3NF) effects in the few-nucleon system is one of the most interesting topics. We have studied the 3NF effects via the nucleon-deuteron elastic reaction by comparing the experimental data and the results of theoretical calculation with (without) 3NF. Concerning about the differential cross sections, the theoretical predictions including 3NF well describe the data at the energy below 150MeV. However, the theory including 3NF underestimate the data of the differential cross sections at 250 MeV significantly. Recently it was revealed that this large discrepancy can not be explained by the relativistic kinematical effects.

For the next step of the study of 3NF effects at higher energy region, the breakup reactions are expected to be more important, because the total cross sections of the breakup reactions are predicted to become larger than that of the elastic reactions. However the kinematics of the final state of the three-nucleon breakup reaction is much more complicated than that of the elastic reaction. Recently, the configurations which exhibit large 3NF effects were surveyed theoretically in some observables. On the basis of the theoretical results, we measured the vector analyzing powers in the so-called final state interaction (FSI) geometry,

$$\vec{p} + d \rightarrow (p_1 n)_{FSI} + p_2 .$$

Experiment was performed at Research Center for Nuclear Physics (RCNP) with polarized proton beam at 250 MeV. We used the deuterated polyethylene (CD_2) sheet and the liquid deuterated hydrogen as the deuteron target. Two protons were momentum analyzed by the two-armed spectrometer Grand Raiden (GR) and Large Acceptance Spectrometer (LAS) in coincidence. We are going to show the results in the talk.