Contribution ID: **105** Type: **Talk**

Quasi-free limit in the deuteron-deuteron three-body break-up process

Tuesday 3 September 2019 14:30 (20 minutes)

Detailed measurements of five-fold differential cross sections and a rich set of vector and tensor analyzing powers of the 2H(˜d, dp)n break-up scattering process are presented. The data were obtained using a polarized deuteron-beam with an energy of 65 MeV/nucleon impinging on a liquid-deuterium target. The experiment was conducted at the AGOR facility at KVI using the BINA 4π-detection system. The main focus of this contribution is to determine the quasi-free limit in dd scattering which corresponds to the elastic deuteron-proton scattering process. To achieve this, events for which the final-state deuteron and proton are coplanar have been analyzed and the data have been sorted for various reconstructed momenta of the missing neutron. In the limit of vanishing neutron momentum and at small deuteron-proton momentum transfer, the data match very well with measured and predicted spin observables of the elastic deuteron-proton scattering process. The agreement deteriorates rapidly with increasing neutron momentum and deuteron-proton momentum transfer.

Authors: RAMAZANI SHARIFABADI, Reza (KVI-CART, University of Groningen,); Prof. KALANTAR-NAYESTANAKI, Nasser (KVI-CART, University of Groningen)

Presenter: Prof. KALANTAR-NAYESTANAKI, Nasser (KVI-CART, University of Groningen)

Session Classification: Parallel Session Tuesday: Few-Nucleon Systems

Track Classification: Nuclei