

Dynamics of three-nucleon systems at 100 MeV

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The dynamics of the three-nucleon system can be very extensively tested by means of the deuteron-proton breakup reaction. Experimental studies of the dp system expose various dynamical ingredients, like three-nucleon force (3NF) and Coulomb force, which play an important role in correct description of observables (e.g. cross section). The cross sections as well as polarized observables (e.g. vector and tensor analyzing powers [1]) are interesting for testing theoretical calculations based on various approaches [2 - 5] to model the interaction in three-nucleon systems. Moreover, studies of the dp breakup reaction at low energy are very crucial for testing The Chiral Perturbation Theory [6] and our experimental results will be compared with theoretical calculations that were done in this regime [7].

The presentation will concentrate on testing the 3NF and the Coulomb force effects for the differential cross section of the $^1\text{H}(d, pp)n$ reaction at beam energy of 100 MeV. The experiment was performed at KVI in Groningen, with the use of the BINA detector [1,8].

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Parallel Session

Few-Body Systems

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