

Investigation of the dp-breakup reaction at intermediate energies at Nuclotron

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The studies of nuclear reactions involving deuterons play an important role in the understanding of the structure of the nucleons and the dynamics of nuclear interactions. The study of processes involving the deuteron helps to solve many actual relativistic problems of nuclear physics, such as nucleon-nucleon interaction at high energies, the structure of light nuclei at small inter-nucleon distances and the production of baryon resonances. At the present, a lot of data on the deuteron are accumulated by using electron and hadron beams [1-3].

Investigation of the deuteron-proton breakup reaction is one of the tools for studying the nature of 3NF and relativistic effects. The dp-breakup measurements have been carried out at the internal target station [4] at the Nuclotron at the Veksler and Baldin Laboratory of High Energy Physics of Joint Institute for Nuclear Research in the framework of DSS project. The energy calibration of the ΔE -E detector has been performed at 300, 400, and 500 MeV. The goal is to obtain results in the form of kinematical curve (S - curve) of the experimental data obtained at the kinetic energy of the deuteron beam of 300 MeV. The results of particular configurations obtained at 300 MeV of deuteron energy will be presented.

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