

**STUDY OF THE DIFFERENTIAL CROSS SECTION
OF THE DEUTERON – PROTON ELASTIC SCATTERING
AT 1 – 2 GeV**

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The study of the different observables in the reactions with deuteron at intermediate and high energies is necessary to understand of the nucleon-nucleon and three-nucleon interaction structure, relativistic effects role and the mechanism of manifestation of the fundamental degree of freedom.

The results of studies of the deuteron-proton elastic scattering differential cross section at energies of 500–1000 MeV/nucleon at the Internal Targets Station at Nuclotron are presented. The obtained results are compared with world data at the similar energies, as well as with the theoretical calculations performed in the framework of the relativistic multiple scattering theory. The best agreement is observed at 500 MeV/nucleon, however, the discrepancy between theory and experiment is increased with the energy increasing. The energy dependences of the differential cross section at six fixed scattering angles in cm. for energy range $\sqrt{s} = 3.1\text{--}3.42$ GeV are in reasonable agreement with the behavior of the world data, as well as with the predictions of the quark counting rules.