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Role of reaction mechanisms in deuteron-proton elastic scattering at GeV energies

The deuteron-proton elastic scattering process is considered in the relativistic expansion framework. Four reaction mechanisms are taken into account: one-nucleon-exchange, single-scattering, double-scattering terms, and delta-isobar excitation in the intermediate state. Each of these terms contributes into the reaction amplitude.
The model calculates the reaction amplitude, which makes it possible to find the angular dependence of both the differential cross section and any polarization observables. In this report, I present deuteron and proton analyzing powers, as well as the proton-to-proton polarization transfers in comparison with the data at the deuteron energy of 1.6 GeV.

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