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THE STATUS OF THE DOUBLE POLARIZED DD-FUSION EXPERIMENT

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A double-polarized dd-fusion experiment (PolFusion, PNPI, Gatchina) has been proposed to investigate the reactions d + d ⟶ 3He + n and d + d ⟶ t + p in the energy range of 10-100 keV. The possibility of using a vector and tensor polarized beam and target combination creates the opportunities to measure the asymmetry of the differential cross section and spin-correlation coefficients in the d + 3He and d + t reactions. Suggested measurements offer capabilities for determination of the quintet-state suppression factor for both reactions, one of the goals of PolFusion experiment program.

A brief description of mathematical model, which allow to predict the observables, status of experimental data and first test measurements are given. Overview of the experimental setup, Monte Carlo simulation studies and details of future analysis are discussed.

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