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## STUDY OF n-n CORRELATIONS IN $d+2H \rightarrow p+p+n+n$ REACTION

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The goal of this work is an experimental study of neutron-neutron interaction and, in particular, of mechanisms of *nn*-correlations in few-nucleon systems. According to [1] strong discrepancies of experimental data and theory observed in nd- and pd-breakup reactions [2, 3] can be explained by a significant strengthening of nn- and pp-correlations of attractive character in the third nucleon field in 3H (pnn) and 3He (ppn) systems.

In this work the  $d + 2H \rightarrow p + p + n + n$  reaction is studied at 15 MeV deuteron beam of U-120 cyclotron of Skobel'tsyn Institute of Nuclear Physics, Moscow State University. In this reaction, the correlated nn- and pp-singlet pairs can be formed dynamically in the intermediate state. Thus, the measured nn- and pp-correlations, in particular, energies of nn (pp) singlet quasi-bound states can appear different than those inherent for a free nn- and pp-systems.

For the first time, in a kinematically complete experiment the energy of quasi-bound state of 2n-system is determined. The energy of the nn 1S0 state is determined by comparing experimental time-of-flight spectrum of the neutron from the breakup of 2n-system with simulation spectra depending on this energy. The obtained value Enn =  $76 \pm 6$  keV is significantly lower than energies (120 - 160 keV) recalculated from the experimental values of 1S0 nn-scattering length [3-5], that perhaps indicates an effective enhancement of nn-interaction in the intermediate state of studied reaction. This work was partly supported by RFBR under grant N16-32-00743.

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