

## Data on the $np$ -scattering length from the $nd$ -breakup reaction at low energies

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A kinematically complete experiment to determine the  $np$ -scattering length in the  $n + d \rightarrow (np) + n$  reaction on the neutron beam of the RADEX channel of the INR RAS was carried out. In the experiment a recoil neutron as well as a neutron from the breakup of the  $np$  system was registered. The primary neutron energy and the proton energy from the breakup of the  $np$  system was reconstructed from the known emission angles and energies of two neutrons and the fact that a breakup proton was detected in an active deuterated target. The experiment was carried out at low neutron energies 8 – 13 MeV. The value of the  $np$ -scattering length was obtained by a comparison of the experimental dependence of the  $nd$ -breakup reaction yield on the relative energy of the  $np$  pair with the simulation results. The obtained value of the  $np$ -scattering length differs significantly from the value obtained in direct  $np$ -scattering and can be associated with a significant influence of  $3N$ -forces.

### The speaker is a student or young scientist

Yes

### Section

1. Experimental and theoretical studies of nuclear reactions

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