

CALCULATIONS OF WAVE FUNCTIONS OF THE
nd-SYSTEM, PHASES, AND CROSS-SECTIONS OF
nd-SCATTERING WITH THE USE OF MODIFIED
FADDEEV'S EQUATIONS AND THE METHOD OF
HYPERSPHERICAL FUNCTIONS

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S u m m a r y

The neutron-deuteron wave functions, *nd* phases, and *nd* scattering cross-sections have been calculated for neutron energies below the deuteron breakup threshold. Starting from the modified Faddeev's equations which have got in our previous paper, the most complicated part of the full wave function describing the three-nucleon motion in the *NN* interaction region is separated and expanded into a series in hyperspherical polynomials with $K = 0, 1, 2$. The system of one-dimensional integral equations for the expansion coefficients has been constructed and solved numerically for incident neutron energies of 2.45, 3, and 3.27 MeV. The Malfliet–Tjon and the Hulthén local *NN* potentials were used in calculations. The calculated *nd* phases and *nd* scattering cross-sections satisfactorily fit the corresponding experimental data.