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## Features of mechanisms of nuclear interactions, structure and properties of weakly bound (exotic and cluster) nuclei at low energies.

Design, development and production of new experimental techniques at ISOLDE to measure:

- Angular distributions of differential cross-sections (ADDCS) of elastic and inelastic scattering with high energy and angular resolution;
- Total reaction cross-sections (TRCS) and excitation functions.

Preliminary research to direct experiments:

- Conduction of control and test measurements of the new method, measurement of angular characteristics of the scattering chamber, energy and angular errors.

Experimental study of nuclear interactions (ADDCS of scattering, TRCS and excitation functions) with light, weakly bound (exotic and cluster) nuclei at low energies and high intensities –with optimal angular and energy resolution. Study of features of diffractive scattering of light exotic and cluster nuclei: possible manifestations of differences in the distribution of nucleons in these nuclei –at energies of Fraunhofer scattering.

Theoretical analysis (diffractive, optico-potential) of experimental data (ADDCS of scattering, TRCS and excitation functions) within the interactions of light weakly bound nuclei.

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