

The goal of the project is the measurement of cross-sections of fragmentation (splitting) of light and medium mass atomic nuclei. The results of these experiments will be useful in understanding and interpreting data measured by experiments studying cosmic rays, and in particular are of crucial importance to extract the characteristics of the diffuse propagation of cosmic rays in the Galaxy.

A wealth of new data on Galactic Cosmic Rays has recently been collected by the AMS and PAMELA space experiments. The fluxes of leptons, nuclei and antiprotons from GeV to TeV are now known to an unprecedented percent-level precision and provide a unique diagnostic of cosmic-ray propagation in the Galaxy and an opportunity to find signatures of dark matter annihilation in the Galaxy. Unfortunately uncertainties of the modeling of the propagation of cosmic rays in the Galaxy still very large, especially transition from primary to secondary cosmic rays. Hence a precise measurements of the cross sections could improve the experimental situation dramatically.

Moreover the project will participate in the upgrade of NA61/SHINE experiment located at CERN SPS. The NA61/SHINE experiment is considered at CERN as an important complement to the experiments carried out at the LHC hadron collider, providing unique data that is impossible to achieve in other ongoing experiments. The subject research of the NA61/SHINE experiment is to study the collision between proton-proton, hadron-nucleus and nucleus-nucleus systems at relativistic energies