

Study and measure irradiation doses for different irradiated samples during of Run8 of the NICA Complex

The NICA Complex which is mainly for fundamental physics, are providing the specialised channels for transporting charged particle beams for applied work.

The applied researches are including the life sciences, the radiation materials science, testing of electronics for radiation resistance and the development of advanced nuclear energy technologies.

LTE is experimental zone which is Long-Term Exposure station for working with samples of various types. The station is part of [ARIADNA](#) collaboration (Applied Research Infrastructure for Advanced Developments at NICA fAcility).

In December 2022, the prototype of the Target station for LTE with high energy ions was assembled at the outgoing beam available behind the BM@N facility. The target station of LTE has an advantage to use beams for applies research purposes in parallel with operation of the BM@N setup.

The goal of the work is to analysis of the data of beam which were taken during of physics data taking with ^{124}Xe beam of the 3.8 A GeV kinetic energy at the BM@N installation in the 4th Commissioning Run of the NICA Complex.

It will be necessary measure the intensity and the profile for samples which were irradiated during of this Run. Because the samples were located after all detectors of BM@N experiment it is necessary to do the study of BM@N experiments setup. By using of the information from detectors of BM@N experiments and measured profile of beam for each run and intensity of the beam of this run should be calculated and integral for intensity for each sample. Have this information needs to find irradiate dozes for each sample.

Students level: Nuclear physics, Linux, Root

Participants: 2-3 students

Project Manager: Dr. Nelli Pukhaeva, senior researcher, ARIADNA collaboration, LHEP.