

# Investigation of cumulative processes of light nuclei production in interaction of heavy nuclei with energies in a range of 1-10 GeV/nucleon

**Korovkin D.S.<sup>1,®</sup> and Baldin A.A.<sup>1</sup>**

<sup>1</sup> Joint Institute for Nuclear Research, Zholtov-Kyuri 6, Dubna, 141980, None

® korovkin@jinr.ru

An analysis of experimental data obtained with extracted relativistic carbon, argon, and krypton ion beams at Nuclotron (LHEP JINR) is presented. The specific features of experiments using the head part of the slow-extraction channel of Nuclotron as a magneto-optical spectrometer are discussed. A method for measuring and analyzing time-of-flight spectra with a temporal resolution of  $\approx 50$  ps is described. Unique data on the simultaneous acceleration and extraction of carbon, nitrogen, and oxygen nuclei from Nuclotron are presented. The possibilities of simultaneous acceleration of ions with similar charge-to-mass ratios are discussed. Spectra of nuclear fragments in the region kinematically forbidden for nucleon-nucleon interactions are analyzed. The upgrade of the head part of the Nuclotron slow-extraction channel for future research is presented.