FIRST EXPERIMENTS AT THE NEW FRAGMENT SEPARATOR ACCULINNA-2

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In 2017 the first set of radioactive ion beams (RIBs) was obtained from the new in-flight fragment separator ACCULINNA-2 [1] operating at the primary beam line of the U-400M cyclotron [2]. Observed RIB characteristics (intensity, purity, beam spots in all focal planes) were in agreement with estimations. The new separator provides high quality secondary beams and it opens new opportunities for experiments with RIBs in the intermediate energy range 10÷50 *A*·MeV [3].

The ^{6}He+d experiment, aimed at the study of elastic and inelastic scattering in a wide angular range, was chosen for the first run. The data obtained in the ^{6}He+d scattering, and in the subsequent measurements of the ^{8}He+d scattering, are necessary to complete MC simulation of the flagship experiment: search of the enigmatic nucleus ^{7}H in the reactions d(^{8}He,^{3}He)^{7}H and p(^{8}He,pp)^{7}H with higher precision in comparison with pioneering works [4, 5].

Opportunities of day-two experiments with RIBs using additional heavy equipment (radio frequency filter, zero angle spectrometer, cryogenic tritium target) will be also reported. In particular, the study of several exotic nuclei ^{16}Be, ^{24}O, ^{17}Ne, ^{26}S and its decay schemes are foreseen.

1. http://aculina.jinr.ru/acc-2.php
2. http://flerovlab.jinr.ru/flnr/u400m.html
3. L.V.Grigorenko *et al.* // Physics Uspekhi. 2016. V.59. P.321.
4. E.Yu.Nikolsii *et al.* // Phys. Rev. C. 2010. V.81. 064806.
5. A.A.Korsheninnikov *et al.* // Phys. Rev. Lett. 2003. V.90. 082501.