

## REPORT on «Status of the Acculinna-2 fragment separator»

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The new ACCULINNA-2 in-flight fragment separator is becoming one of the world-class facility being the basis at the Flerov Laboratory of Nuclear Reactions (FLNR) to study light exotic nuclei in the vicinity of the nucleon stability with radioactive ion beams. Several times ACCULINNA-2 scientific presentations have already been highly appreciated by the Nuclear Physics PAC of JINR: the success of the Dubna group encouraged the PAC to recommend them to continue the international collaborations with teams from Europe and abroad on original experiments.

After the success of the commissioning of the ACCULINNA-2 in-flight fragment separator in March 2017, the first set of radioactive ion beams (RIB) was obtained in fall 2017 with the first experimental run. The fragmentation reaction  $^{15}\text{N}(49.7 \text{ MeV/nucleon}) + \text{Be}(2 \text{ mm})$  was used for the production of intensive  $^6\text{He}$  RIB. The collaboration proposes that the first experiments to investigate the  $^6\text{He}+d$  elastic and inelastic scattering. The experimental program for 2018 will benefit of high-quality secondary  $^6\text{He}$  and  $^8\text{He}$  beams (compatible with the estimations of the LISE++ code) necessary to study the flagship  $^8\text{He}+d \rightarrow ^3\text{He}+^7\text{H}$  reaction with high statistics.

**In conclusion, as the results of the first set of  $^6\text{He}$  experiments are quite convincing for future experiments and whereas both the requested ressources and the time schedules of the Project Acculinna-2 remain rather reasonable, the scientific programme appears to be very promising.**



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