

Studies of light exotic nuclei at ACCULINNA/ACCULINNA-2 facilities

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ACCULINNA is in-flight fragment separator based on U-400M cyclotron at Flerov Laboratory of Nuclear Reactions (FLNR, JINR, Dubna, Russia). In the recent years there was a successful line of research at FLNR dealing with light dripline systems. Novel results were obtained for such isotopes as ^5H [1,2,3], ^7H [4], ^8He [5], ^9He [6], ^{10}He [5,7], ^6Be [8], and ^{26}S [9]. The major results of these studies are presented and discussed both from experimental and theoretical points of view. In theoretical discussion we focus on continuum properties (including continuum properties of three-body systems), studies of specific correlations, and practicalities of connection between theory and experiment.

The important part of scientific plans for FLNR for the nearest 5-7 years include development of DRIBS-3 initiative (Dubna Radioactive Ion BeamS). In the framework of this initiative the ACCULINNA facility is currently being replaced with much more powerful ACCULINNA-2 fragment separator (commissioning planned in 2015). The ACCULINNA is planned to be gradually converted to applied activities (biology and material research). We discuss the characteristics and scientific objectives of the now build ACCULINNA-2 fragment separator and formulate the general scientific program for the first years of operation.

References:

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Notes

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