Decay of relativistic hypernuclei . Kinematic Analysis.*

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The contribution is focused on the analysis and mathematical modelling hypernuclei decay. Hypernuclei - nuclei composed of nucleons and hyperon - enable us to more precise study baryon-baryon interaction, both weak and strong. Several experiments for study new hypernuclear objects are presently taking data or are planned in several laboratories in Europe (Italy, Germany, Russia), Japan and USA. The aim of the presentation is detailed analysis of three and four particle decay of hypernuclei produced in relativistic ion beams and introduction the catalogue of all possible decays of light hypernuclei (A<12). Created catalogue could be exploited for experimental data evaluation.

We continue our discussion presented on FINUSTAR [1]: detailed analysis of three-particle decay using Dalitz diagrams and new information of partial channels saturation will be used in the first part of the experiment (prepared in JINR) - study pionic decay of light hypernuclei (H,He) [2]. Kinematic analysis of non-mesonic decay of $^{10}B_{\Lambda}$ and $^{10}Be_{\Lambda}$ hypernuclei and the identification of exclusive decay channels will open the way to the phenomenological analysis of the weak decay $\Lambda N \rightarrow NN$ [3].

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[1] O. Majlingova, V. Sopko, AIP Conference Proceedings, vol. 831, p. 496.
[2] S.V. Afanasiev *et al.*, EPJ A (2007) in press (Proceedings HYP06, Mainz)
[3] Y. Batusov *et al.*, Physics Part. and Nuclei, 36 (2005) 169.