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Analysis of hypernuclei in simulated data of the BM@N experiment

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This work is devoted to the study of the simplest hypernuclei, namely $3H\Lambda$ (consisting of one proton, one neutron, and one Λ -hyperon) and $4H\Lambda$ (consisting of one proton, two neutrons, and one Λ -hyperon). They may be one of the possible markers of the phase transition from nuclear matter to quark-gluon plasma in high-energy ion collisions. The aim of this work is to reconstruct the hypernuclei peak in the invariant mass distribution for simulated data for the BM@N experiment. In the report algorithm of geometrical parameters selection for both decays presented. Estimation of reconstruction efficiency in phase space {pt, y} done. Approach tocalculate lifetime of observed hypernuclei is presented.

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