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Large scintillator EN-detector with natural boron for EAS study

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The URAN array for EAS study is now under construction in MEPhI in collaboration with INR RAS. The basic element detector for the array is EN-detector sensitive to both thermal neutron and electromagnetic components. For this study we developed a novel type of EN-detector based on a thin layer of alloyed mixture of inorganic scintillator ZnS(Ag) with B_2O_3 as a target for neutrons. Main feature of the detector is its sensitivity to hadronic EAS component through secondary neutrons produced by high energy hadrons in the vicinity of the detector. Neutron component is not almost studied, though it is a part of the main EAS component –hadronic one. Some new features of a novel EN-detector are described. It is shown that this relatively cheap detector variant can have rather good performances. Results of measurements are compared with Monte-Carlo simulations using GEANT4 code.

Collaboration

– not specified –

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