



Contribution ID : 291

Type : Poster

Portable muon telescope for measuring cosmic muon fluxes

Tuesday, 22 October 2024 17:05 (115)

The monitoring of cosmic muons is an important and permanent task for low-background particle physics experiments at the surface and at shallow laboratory locations. Nevertheless, the monitoring itself at the current level of development of experimental physics techniques is rather a methodical task, so its automation seems to be necessary. This paper presents such a system for the registration of cosmic muons on the basis of plastic scintillators. The telescope is a compact portable system of three detectors, which allows to hold and change the zenith angle in automatic mode with the help of a built-in microcontroller, as well as to automate a series of measurements of the cosmic background. The results of laboratory measurements and measurements in the conditions of a nearby nuclear power reactor are presented.

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Session Classification : Poster session

Track Classification : Facilities and advanced detector technologies