A Calibration Method for the Test System of Scintllator Detectors

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Abstract

The aim of this work is to show a calibration method of a test system that will be systematically implemented for the particle detectors developed and produced at the ITeDA facilities. A big number of more than 16000 individual scintillator strips of 4.1 cm x 1.0 cm x 400 cm will have to be tested together with its associated optical fiber. A reliable and fast testing method is therefore compulsory to characterize all the detectors. The detector testing routine consists of two steps: first each scintillator is scanned using a 137 Cs radioactive source to obtain its attenuation curve and, secondly, the resulting curve is normalized by means of background muons using a coincidence device through a specific point over the scintillator. The details of the calibration procedure are presented along with preliminary results from a prototype detector testing.