

Tests of the Plastic Strip Detector with WLS Fibres Read Out

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Abstract

The position sensitive plastic detectors with WLS fibres are considered.

The detector measuring plane consisted of 16 plastic strips is studied as one cell for tracking, triggering and calorimetry in cosmic experiments. Each plastic strip /7*10*160/ has grooves along one of strip side for two fibres. The first fibres of all strips as a main outputs are connected to multyanode PMT R-5900-64, the others are collected to PMT-R-5900 and used for trigger.

The needed wide energetic range is obtained by lowering PMT HV, so for the small input signals the HMT works in conditions of single electron reaction. The signals from PMT anode are amplified by charge sensitive preamplifier and SER is measured with help of LED. The noise and statistic component of energetic resolution are assessed.

The calibrations of same measuring plates on cosmic muons are carried out with help multychannel integral electronics Viking.

In order to estimate the strip ununiformity the measuring plate has been scanned across the strips by radioactive source Sr-90.