

## Design, construction, test, operation and simulation of a four channel cosmic ray detector

### Abstract

Cosmic ray detectors are constructed to fit many purposes and different materials and geometries. To test materials and to measure the flux of cosmic rays, we planned, designed, constructed and test a 4 channel cosmic ray detector based on 2.54 cm X 10.32 cm X 20.64 cm Aluminum block and two 0.6 cm X 10.32 cm X 20.64 cm plastic scintillator completed covered with 0.2 cm tick Aluminum foil. The signal, produced by the passage of cosmic ray, was read out using a Hamamatsu photomultiplier in both the Aluminum block and plastic scintillator. The performance was simulated using GEANT 4. The efficiency of the cosmic ray detector was measured to give 85% approximately. Details of construction, operation, simulation, and preliminary results are presented.

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