

Instrumentation of the GRAPES-3 Muon Telescope

The proportional counters developed and operated by the GRAPES-3 experiment (Gamma Ray Astronomy PeV EnergieS Phase-3), Ooty, are gas-based detectors designed using mild steel rectangular tubes. The existing muon telescope of GRAPES-3, consisting of 3712 PRCs, has been in operation for the past few decades and data gathered by it has ensured the study of solar, atmospheric and cosmic muons. Another muon telescope is under construction using 3776 more PRCs. Instrumentation is being upgraded using in-house developed front-end readout and FPGA-based back-end data acquisition systems to enhance sensitivity and performance. This talk provides insights into the existing instrumentation techniques and advancements included in the ongoing upgrade, along with an account of the current status of the GRAPES-3 muon telescope.

Primary authors: RAMESH, K (Tata Institute of Fundamental Research, Mumbai, India); Dr S.K, Gupta; Dr B, Hariharan; Dr M, Rameez; Dr P.K, Mohanty; Mr A, Jain; Dr P.A, Wincy; Dr S, Kawakami; Dr Y, Hayashi; Dr P, Jagadeesan; Dr P.K, Nayak

Presenter: RAMESH, K (Tata Institute of Fundamental Research, Mumbai, India)

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