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PROJECT REPORT

SCINTILLATOR CHARACTERIZATION FOR GE1/1 QUALITY CONTROL

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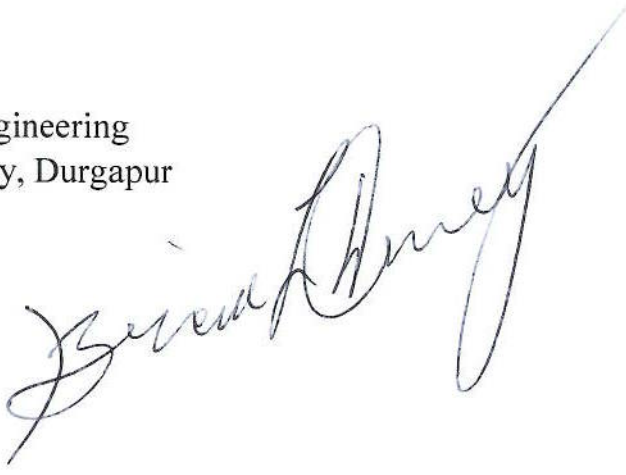

Abstract: A Cosmic Muon Trigger System is assembled with scintillators and photo multiplier tubes. A **scintillator** is a material that exhibits scintillation — the property of luminescence when excited by ionizing radiation. Luminescent materials, when struck by an incoming particle, absorb its energy and scintillate, that is re-emit the absorbed energy in the form of light. The photons emitted by the scintillators are counted by the **photo multiplier tubes** (PMTs). The PMTs convert the incident photons to electric pulses. By studying the electrical signals from the PMTs, we deduce results about the original particle that struck the scintillator. This trigger system serves to confirm that our detector, in this case, **Gas Electron Multiplier** (GEM) is really detecting the cosmic rays coming from the atmosphere.