

Abstract Submitted
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Cosmic Ray Neutron Flux Measurements MATHES DAYANANDA, GSU — Cosmic rays are high-energetic particles originating from outer space that bombard the upper atmosphere of the Earth. Almost 90% of cosmic ray particles consist of protons, electrons and heavy ions. When these particles hit the Earth's atmosphere, cascade of secondary particles are formed. The most abundant particles reach to the surface of the Earth are muons, electrons and neutrons. In recent years many research groups are looking into potential applications of the effects of cosmic ray radiation at the surface of the Earth [1, 2]. At Georgia State University we are working on a long-term measurement of cosmic ray flux distribution. This study includes the simultaneous measurement of cosmic ray muons, neutrons and gamma particles at the Earth surface in downtown Atlanta. The initial effort is focusing on the correlation studies of the cosmic ray particle flux distribution and the atmospheric weather conditions. In this presentation, I will talk about the development of a cosmic ray detector using liquid scintillator and the preliminary results.

[1] K.Borozdin, G.Hogan, C.Morris, W.Priedhorsky, A.Saunders, L.Shultz, M.Teasdale, "Radiographic imaging with cosmic-ray muons", Nature, Vol.422, p.277, Mar.2003

[2] Svensmark Henrik, Physical Review 81, 3, (1998)

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