Abstract Submitted
for the DNP13 Meeting of
The American Physical Society

Understanding the effect of atmospheric Density on the Cosmic Ray Flux Variations at the Earth Surface XIAOHANG ZHANG, MATHES DAYANANDA, CAROLA BUTLER, XIAOCHUN HE, Georgia State University — While the true impact of cosmic rays on the earth climate change is currently far from conclusive, continued efforts of long-term monitoring of cosmic ray flux variations are imperative. This study also requires a quantitative understanding of the influence of atmosphere air density fluctuations to the cosmic ray flux. In this talk, we present the study of the dependence of cosmic ray muon and neutron flux on the atmospheric density variations using Geant4 simulation package. The results are compared with the neutron flux measurements in Oulu, Finland and the muon flux measured in Atlanta, US.

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Date submitted: 01 Jul 2013 Electronic form version 1.4