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Cosmic Ray Flux Measurements with a Muon Detector System
CHRISTOPHER OAKLEY, Georgia State University — A muon detector was used to measure the cosmic ray flux in the Natural Science Center (NSC) building on the Georgia State University campus. The detector measures the flux of cosmic ray muon as well as the energy-loss within the detector components. The detector was run on the third, fourth, and fifth floors of the building to determine if there is a significant change in muon flux. A simulation, the Mu II code, was designed to emulate the physics processes that occur in a cosmic ray shower. The goal of the Mu II code is to accurately simulate cosmic ray shower events and provide greater understanding of the physics to which they are related as well as introduce scientific inquiry and interest to students and educators. The results of the simulation are consistent with the data, showing similarities in energy loss distribution and a positive indication of shielding effects.

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