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Temporal Variation in Cosmic Ray Muon Flux STEVEN STROBERG, KALYA EVANS, BETHANY LYLES-GOLDBLUM, ERIK SWANBERG, ERIC NORMAN, Nuclear Engineering Dept-University of California, Berkely — Plastic scintillator detectors are often used in homeland security applications that look for high energy photons, such as active interrogation of cargo containers. In these applications, the background due to cosmic ray muons is assumed to be constant. However, there appears to be potentially significant variation in the muon flux over time. The muon flux was measured over a period of several months using two plastic scintillator detectors (122x61x15 cm and 30x30x10 cm). The data from these detectors were compared to data from cosmic ray neutron detectors in Kiel, Calgary, Moscow, Thule and Beijing collected during the same time period. The response function of the two detectors was also compared with a model developed in MCNPX code using the CRY simulated cosmic ray background. Preliminary data suggest that the temporal variation in muons is significantly greater than that of the cosmic ray neutrons.

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