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Presentation Type: Poster

Poster Sorting Catgegory: 16. Conference Experience for Undergraduates (CEU)

Category Type: Computational

Abstract Title: Computational Simulation of Atmospheric Muon Rates at Sea-Level

Abstract Body: The measurement of muon rates as a function of angle from the zenith is a venerable undergraduate laboratory exercise. Hoping to better understand the physics that underlies the widely accepted parameterization that the rate is proportional to $\cos^2\theta$, we have developed simple computational models that replicate the parameterization. The model assumptions include: relativistic treatment of muon decay, flat earth approximation, muon energy loss, and the change in atmospheric density with altitude. The distribution of muons with altitude and the energy distribution of the muons is varied. We will report on the primary factors in the model that replicate the observed trend.

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Feedback and Support

Newsworthy Research? No

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