Abstract Submitted
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High Energy Leptons from Muons in Transit ALEXANDER BULMAHN, MARY HALL RENO, University of Iowa — We use a new formalism developed in our previous work to numerically evaluate the differential cross section for lepton pair production from muons in transit through rock or ice. This formalism gives better results than the approximate formulas in the literature for a large range of momentum transfers and lepton mass. The differential cross section is used to calculate underground lepton fluxes from an incident atmospheric muon flux, considering contributions from both conventional and prompt fluxes. Neutrino production of leptons is also considered. We provide a new analytic approximation for the charge current differential neutrino cross section. Comparisons of muon induced and neutrino induced electrons and taus are made for underground detectors.

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