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Simulation of Cosmogenic Background's at Underground Facilities¹ KAI HUDEK, ALAN POON, REYCO HENNING, Lawrence Berkeley National Laboratory, MAJORANA COLLABORATION — Fast neutrons produced by cosmic muons in rock surrounding an underground facility can generate irreducible backgrounds in detectors, and in some experiments determine the sensitivity. Understanding the muon-induced production and the response of underground detectors to fast neutrons is crucial for the design of next generation low background experiments. Simulations were conducted using the GEANT4-based Monte Carlo package MaGe, a joint development between the Majorana and Gerda collaborations. Simulations of the total muon-induced neutron background and spectrum as a function of depth, and the response of the proposed Majorana experiment will be presented.

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