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Cosmogenic Activation in the DM-Ice Experiment[1] WALTER PETTUS, University of Wisconsin - Madison, DM-ICE COLLABORATION — DM-Ice is a quarter-ton-scale dark matter experiment planned for deployment deep in the ice at the South Pole. This experiment will search for the expected annual modulation signature in the dark matter signal using low-background NaI(Tl) scintillating crystals. Cosmogenic activation of the detectors during transport to and storage at the South Pole (altitude 9,186 feet) has the potential to produce long-lived radioisotopes which will add a significant source of background and threaten the discovery potential of this experiment. We present simulation studies in the rate of activation and the spectral affect these additional radioactive decays will have. In data from the presently operating DM-Ice17 detectors, we compare the simulated activation spectra with decaying spectral regions. For the full-scale DM-Ice, we discuss the possible effects of this activation, and mitigation strategies being explored.

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