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Cosmogenic Background Suppression at the Short-Baseline Far Detector (ICARUS) with the Cosmic Ray Tagging System[1] CHRISTOPHER HILGENBERG, Colorado State University — The ICARUS liquid argon time-projection chamber will operate at shallow depth and therefore be exposed to the full surface flux of cosmic rays. This poses a problematic background to the electron neutrino appearance analysis. A direct way to suppress this background is to surround the cryostat with a detector capable of tagging incident cosmic muons with high efficiency (95%). This cosmic ray tagger (CRT), currently in the commissioning phase, is achieved through adopting a system based on extruded organic scintillator, wavelength-shifting fibers, and silicon photomultipliers. A full detector simulation of the CRT system has been implemented, and a large cosmogenic sample, generated via CORSIKA, has been produced. In this talk, I will present progress toward the development of reconstruction tools for cosmogenic background suppression in ICARUS and their application to first data from the partially commissioned CRT system.

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