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Cosmic Ray Tagger for the Short-Baseline Neutrino Program Far Detector CHRISTOPHER HILGENBERG, ROBERT WILSON, DAVID WARNER, TYLER BOONE, Colorado State University — The icarus T600, the world's largest liquid argon time projection chamber, will be the far detector in the final short-baseline neutrino program (sbn). The T600 was located at gran sasso laboratory collecting data during exposure to the cngs beam and cosmic rays. In 2014, it was moved to cern for refurbishing and will move to final in 2017. As the far detector in sbn, the T600 will make measurements on neutrino interactions produced by both the bnb and numi beams. A challenge for the T600 will be exposure to cosmic rays during surface operation. Cosmic muons passing through or near the T600 active volume (av) can produce photons that mimic electron neutrino interactions. To maintain a high oscillation search sensitivity, a system external to the t600 av tagging cosmic muons with $>95\%$ efficiency is required. We report on the design of a cost-effective cosmic ray tagger by the colorado state university group that consists of a two-layer x-y configuration of organic scintillator bars with embedded optical fibers and silicon photomultiplier readout.

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