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The search for dark matter in dwarf galaxies with HAWC PATRICK HARDING, Los Alamos National Laboratory, HAWC COLLABORATION — The High Altitude Water Cherenkov (HAWC) gamma-ray observatory is a wide field-of-view observatory sensitive to 100 GeV 100 TeV gamma-rays and cosmic-rays. Among the signals that HAWC should be sensitive to are possible gamma-ray emissions from dark matter annihilation and decay. With its high energy reach and large field-of-view, HAWC is able to search many objects for signals of gamma-rays from high-mass dark matter, with masses up to 1000 TeV. One promising class of objects in which to search for such indirect detection of dark matter are dwarf spheroidal galaxies, which are expected to have few astrophysical gamma-ray sources but large dark matter content. Here we present early HAWC limits on the dark matter annihilation cross-section and decay lifetime from 14 dwarf spheroidal galaxies within the HAWC field-of-view, including a combined limit using all 14 galaxies. HAWC is able to limit higher dark matter masses than have been previously studied.

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