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## First Limits on the Dark Matter Cross-Section with the High Altitude Water Cherenkov (HAWC) Observatory

*Friday, August 7, 2015 2:54 PM (18 minutes)*

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. The HAWC observatory is also sensitive to diverse astrophysical searches for signatures of annihilating and decaying dark matter. These include gamma-ray emission from extended sources of dark matter such as galaxies and Galaxy clusters, emission from the center of the Milky Way, and from non-luminous dark matter subhalos. With its sensitivity to over 2/3 of the sky, HAWC has the ability to probe a large fraction of the sky for the signals of TeV-mass dark matter. In particular, HAWC should be the most sensitive experiment to signals coming from dark matter with masses greater than 10-100 TeV. We will present the HAWC sensitivity to annihilating and decaying dark matter signals for several likely sources of these signals. We will also present early HAWC limits on the dark matter annihilation cross-section from dwarf spheroidal galaxies, objects which are expected to have few astrophysical sources of gamma-rays but high dark matter content.

### Oral or Poster Presentation

Oral

**Primary author:** HARDING, J. Patrick (Los Alamos National Laboratory)

**Presenter:** HARDING, J. Patrick (Los Alamos National Laboratory)

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