Abstract Submitted
for the APR18 Meeting of
The American Physical Society

Searches for Dark Matter in the Galactic Halo with the High Altitude Water Cherenkov Observatory J. PATRICK HARDING, Los Alamos Natl Lab, HAWC COLLABORATION — With its observations over 2/3 of the sky every day, the High Altitude Water Cherenkov (HAWC) observatory is sensitive to a wide variety of astrophysical sources, including possible gamma rays from dark matter. Dark matter annihilation and decay in the dark matter halo of the Milky Way Galaxy should produce gamma-ray signals which are spatially extended on the sky. We present a limits on the dark matter annihilation cross-section and decay lifetime from HAWC observations of the Galactic halo from 15 months of HAWC data. These are some of the most robust limits on TeV and PeV dark matter and are largely insensitive to the dark matter morphology. In particular, we show that these limits can constrain dark matter models in which PeV IceCube neutrinos are explained by dark matter which primarily decays into hadrons.

J. Patrick Harding
Los Alamos Natl Lab

Date submitted: 11 Jan 2018 Electronic form version 1.4