APR16-2016-000663

Abstract for an Invited Paper
for the APR16 Meeting of
the American Physical Society

The HAWC Galactic Plane Survey

MICHELLE HUI, NASA MSFC

The High Altitude Water Cherenkov (HAWC) Observatory is an all-sky surveying instrument that covers 2/3 of the sky in 24 hours. It is designed with an emphasis on continuous sky coverage for transient events, and on the measurement of extended and large-scale structures. The array is located in Sierra Negra, Mexico at an elevation of 4,100 m and was inaugurated in March 2015. The HAWC array consists of 300 water Cherenkov detectors and is sensitive to extensive air showers triggered by cosmic rays and gamma rays from 100 GeV to >100 TeV. Thanks to its modular design, data taking began in Summer 2013 with 1/3 of the array. Analysis of the first year of data with the partial array shows detections that are coincident with known TeV supernova remnants and pulsar wind nebulae along the Galactic plane. Spectral and morphological analyses are ongoing to study the particle population and acceleration mechanism of these objects. With a growing data set taken with the completed array, source searches are underway for both point-like and extended emission along the Galactic plane, which contain many objects such as pulsar wind nebulae, young star clusters, and binaries.