



Contribution ID: 379

Type: **Oral contribution**

Fermi Bubbles with HAWC

Tuesday 4 August 2015 11:00 (15 minutes)

The Fermi Bubbles, which comprise two large and homogeneous regions of spectrally hard gamma-ray emission extending up to 55° above and below the Galactic Center, were first noticed in GeV gamma-ray data from the Fermi Telescope in 2010. The mechanism or mechanisms which produce the observed hard spectrum are not understood. Although both hadronic and leptonic models can describe the spectrum of the bubbles, the leptonic model can also explain similar structures observed in microwave data from the WMAP and Planck satellites. Recent publications show that the spectrum of the Fermi Bubbles is well described by a power law with an exponential cutoff in the energy range of 100MeV to 500GeV. For Example, observing the Fermi Bubbles at higher gamma-ray energies would help to constraint the spectrum of the bubbles. A steeper cutoff will favor a leptonic model. The High Altitude Water Cherenkov (HAWC) Observatory, located 4100m above sea level in Mexico, is designed to measure high-energy gamma rays between 100GeV to 100TeV. With a large field of view and good sensitivity to spatially extended sources, HAWC is the best observatory suited to look for extended regions like the Fermi Bubbles. We will present results from a preliminary analysis of the Fermi Bubble visible to HAWC in the Galactic Northern Hemisphere.

Collaboration

HAWC

Registration number following "ICRC2015-I"

359

Authors: HUI, C. Michelle (Michigan Technological University); AYALA, Hugo (Michigan Technological University); HUENTEMEYER, Petra (urn:Google)

Presenter: AYALA, Hugo (Michigan Technological University)

Session Classification: Parallel GA14 GAL / Bubbles etc

Track Classification: GA-EX