

Abstract Submitted
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Observations of the Small Scale Cosmic Ray Anisotropy by HAWC AHRON BARBER, Univ of Utah, HAWC COLLABORATION¹ — HAWC, the High Altitude Water Cherenkov Observatory, is being built on the slopes of Sierra Negra in the Pico de Orizaba Mexican National Park. This gamma-ray and cosmic-ray observatory is at 4100m A.S.L. and is a second generation water Cherenkov detector. Previously, the Milagro observatory (HAWC's predecessor) and the ARGO and Tibet observatories have detected anisotropy on angular scales of ~ 10 - 20 degrees with amplitudes of $\sim 10^{-4}$ in the arrival directions of cosmic rays. This small-scale anisotropy has no predicted origin. Cosmic rays in the TeV energy range have gyroradii less than 0.01 pc and their arrival directions should be isotropic, as there are no known sources within this distance. Recent theories suggest that the anisotropy could be due to galactic and/or heliospheric effects. HAWC-30, the first 10% of HAWC, began operations on January 1st, 2013 and was able to detect the small-scale cosmic ray anisotropy regions. In addition, HAWC-95, which started operations in mid-June 2013, was able to detect the anisotropy after ~ 1.5 months.

¹High Altitude Water Cherenkov observatory

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