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Observation of Anisotropy in the Arrival Direction Distribution of TeV Cosmic Rays With HAWC

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The High-Altitude Water Cherenkov (HAWC) Observatory, located 4100 m above sea level near Pico de Orizaba (19° N) in Mexico, is sensitive to gamma rays and cosmic rays at TeV energies. The arrival direction distribution of cosmic rays at these energies shows significant anisotropy on several angular scales, with a relative intensity ranging between 10^{-3} and 10^{-4} . We present the results of a study of cosmic-ray anisotropy based on more than 100 billion cosmic-ray air showers recorded with HAWC since June 2013. The HAWC cosmic-ray sky map, which has a median energy of 2 TeV, exhibits several regions of significantly enhanced cosmic-ray flux. We present the energy dependence of the anisotropy and the cosmic-ray spectrum in the regions of significant excess.

Collaboration

HAWC

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