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High Energy Astrophysics with the HAWC Gamma Ray Observatory

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The High Altitude Water Cherenkov (HAWC) Observatory is being constructed at the Volcan Sierra Negra in Mexico (latitude 190 N) at 4,100m altitude. Having a modular design of 300 water Cherenkov detectors over an area of 22,000 m2 it is designed to survey continuously the sky overhead with an instantaneous field of view of 2sr detecting air-showers from cosmic and gamma-rays at energies from 100 GeV to hundreds of TeV. A partial array of 100 detectors has been in operation for one year. Results from these observations that include a measurement of the small-scale anisotropies in the arrival direction of cosmic rays, the observation of several Forbush decreases and the detection of galactic and extra-galactic gamma ray sources will be presented. The final array is scheduled to be in operation by the end of this year. The sensitivity of HAWC to different type of sources and the operation and alert capabilities will be discussed.

Primary author: Dr SANDOVAL, Andres (Instituto de Fisica, UNAM, Mexico)

Presenter: Dr SANDOVAL, Andres (Instituto de Fisica, UNAM, Mexico)

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