

Abstract Submitted
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Study of HAWC Sensitivity to AGN ASIF IMRAN, Los Alamos National Laboratory, HAWC COLLABORATION — The High Altitude Water Cherenkov (HAWC) experiment is the next generation extended air shower array. Construction of the project has already begun in Sierra Negra, Mexico at an altitude of 4100 m. With improved energy resolution, lower energy threshold, and better angular resolution, the completed HAWC array is predicted to be 10–15 times more sensitive than MILAGRO, the highly successful predecessor to HAWC. Here, we examine Monte Carlo simulations to calculate the sensitivity of the HAWC detector to the existing population of active galactic nuclei (AGN). Moreover, we simulate heightened gamma-ray emission from the AGNs with varying flaring time-scales and obtain the corresponding HAWC sensitivity to these AGNs. Combining HAWC's extended energy coverage over 50 GeV to 100 TeV and a very high duty-cycle, HAWC will trigger multi-wavelength campaigns for transient AGNs. Finally, I investigate the implications of the observations of AGNs at the highest energies (> 30 TeV) on our present understanding of the infrared background radiation.

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