

Simulations performance for an array of refractive air-Cherenkov telescopes HAWC's Eye in hybrid setup with the HAWC Observatory

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Preliminary results from the analysis of first data from hybrid observation campaigns using a compact light-weight Refractive Imaging Air-Cherenkov Telescope (RIACT), named HAWC's eye, and the High-Altitude Water Cherenkov (HAWC) Observatory have shown that some features of the air-shower detection in HAWC, as the angular resolution, could be enhanced. Therefore an array of such devices could be an interesting upgrade for modern and future experiments such as the HAWC Observatory or the Southern Wide-field Gamma-ray Observatory (SWGGO). In this work, we show results of simulated observations of extensive air-showers in different configurations of an array of 55 HAWC's Eye RIACTs in simultaneous detection with the HAWC Observatory. We have produced an extensive library of simulated primary particles as γ -rays and hadrons in an energy range from 100 GeV to 100 TeV at an altitude of 4100 m. a.s.l. The features and performance of such an array are discussed in this work.

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IACT, gamma-ray, hybrid observation, HAWC, HAWC's Eye, simulations

Collaboration

HAWC

other Collaboration

Subcategory

Experimental Methods & Instrumentation

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