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Upgrade paths for the HAWC gamma-ray observatory

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The initial concept of the HAWC Observatory, an air shower array of 300 water Cherenkov detectors on the slope of Sierra Negra in Mexico, has been successfully carried out with the completion of construction in December 2014. The HAWC detector, located 4100 m above sea level, has begun continuous operation surveying the sky for cosmic rays and gamma rays between 100 GeV and 100 TeV. The experience of the Milagro experiment, the predecessor to HAWC, has shown that the effective area of such an array can be dramatically increased by adding an outrigger array of small particle detectors. The outriggers improve the identification of shower cores that do not fall on the central array, leading to a more effective reconstruction of these showers, especially at high energies.

Collaboration

HAWC

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