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Observing the universe at TeV energies with the HAWC observatory

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Abstract content

The HAWC (High Altitude Water Cherenkov) observatory is a proposed experiment that combines a very high altitude site with the developed and proven Milagro water Cherenkov technology. HAWC is a 150m x 150m pond of water located above 4100 m over sea level with a large field of view and a duty cycle higher than 95%. It observes the relativistic particles and secondary gamma rays in extensive air showers of primary particles with energies above a few tens of GeVs up to hundreds of TeVs. HAWC will survey 2 pi sr of the sky every day with a sensitivity of the Crab flux at a median energy of 1 TeV. After one year of operation, half of the sky will be surveyed to 50mCrab. This sensitivity will likely result in the discovery of new sources as well as allow to follow up observations of detectors such as GLAST, VERITAS/HESS and IceCube. In this work, the observatory design, performance, capabilities and possible sites will be discussed.

If this papers is presented for a collaboration, please specify the collaboration

HAWC

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 3 (OG part 2), pages 1563-1566

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