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ANTARES event reconstruction

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Abstract content

The ANTARES Collaboration is building a high energy neutrino telescope at 2500 m depth in the Mediterranean Sea. The experiment aims to search for high- energy cosmic neutrinos through the detection of Cerenkov light induced by muons and showers resulting from neutrino interactions with the surrounding medium. The detector will consist of a three-dimensional array of 900 optical modules housing photomultipliers. It will be composed of 12 strings, 5 of them being in operation since January 2007. The muon track is reconstructed from the arrival time and the charge of the signals obtained from the photomultipliers, whose positions are known by means of an acoustic positioning system. The reconstruction strategies include several steps among which there are: optical background filtering, algorithms for first estimations of the track parameters, and a final fit aiming to reach an angular resolution better than 0.3 degree above 10 TeV in the full detector. Different reconstruction strategies will be presented and their application to the present real data analysis will be reviewed.

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

ANTARES

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. 5 (HE part 2), pages 1365-1368

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