30th International Cosmic Ray Conference

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Sensitivity studies of the cubic-kilometre deep-sea neutrino telescope KM3NeT

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Abstract content

The observation of high energy neutrinos would be a significant constraint for non thermal processes in astrophysical sources (active galactic nuclei, supernovae remnants...). Moreover it would also be the evidence for cosmic ray acceleration inside our galaxy. Recent precise measurements of the cosmic gamma-ray spectrum above 1 TeV with the High Energy Stereoscopy System (H.E.S.S.) instrument, combined with hadronic models, lead to predictions of neutrino fluxes.

The effective neutrino area and the angular resolution, obtained for a next- generation neutrino telescope in the Mediterranean Sea, KM3NeT, optimized for muon neutrino detection between 1 and 100 TeV, is used to calculate the average number of events after some years of data taking. The effect of atmospheric background on the source detection probabilities has been taken into account through full simulation. These estimated rates are compared to previous results and limits from present neutrino telescopes.

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

KM3NeT Consortium

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 1417-1420

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