Contribution ID : **582** Type : **Poster**

Cluster Search for neutrino flares from pre-defined directions

Monday, 9 July 2007 14:45 (0:00)

Abstract content

Several candidate neutrino sources manifest variable electromagnetic emission, often with burst-like behaviour. It is interesting to consider that the neutrino emission from such sources could have similar time character. In the context of the so called multi-messenger approach, information from high energy neutrinos and different electromagnetic wavelengths (e.g., high gamma-rays) is combined, we present a method to search for clusters of neutrinos from pre-defined directions. The time structures we searched for must indicate an occasional deviation from the background hypothesis while not contradicting observations from time-integrated searches. We report recent developments of this method, a study of the background rate over short time scales, and novel results obtained from recent AMANDA data (year 2004 and later). We also discuss the perspectives for IceCube.

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

AMANDA/IceCube

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 1353-1356

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Session Classification : Posters 3 + Coffee

Track Classification : HE.2.3