

A needlet-based approach to directional data analysis

Friday, 28 October 2011 15:30 (20 minutes)

EAS array dataset contains signal laying on different angular scales: point-like and extended gamma-ray sources, as well as large and intermediate scale cosmic-ray anisotropies. The separation of all these contributions is crucial, mostly when they overlap with each other. In recent years, the needlet transform has proved to be an effective tool in the analysis of cosmological and astrophysical data, because of the easiness of implementation and the remarkable double-localization properties (in real and harmonic domain). Nevertheless, it has been never used in cosmic-ray and very high energy gamma-ray physics so far. Here the results of the application of this technique to the whole ARGO-YBJ dataset are presented, pointing out the advantages of this new approach with respect to the standard methods of analysis employed in astroparticle physics.

Presenter: IUPPA, Roberto (INFN, Roma 2)

Session Classification: Anisotropy measurements and methods