

Arrival Directions at Ultra-High Energies: A Review

Wednesday 12 October 2016 15:05 (20 minutes)

In the same way as for previous series of international symposia on future directions in UHECR physics, an inter-collaborative anisotropy working group has been established with membership from the Pierre Auger Observatory (Auger) and the Telescope Array experiment (TA) with the task to compile a balanced view about the current status of anisotropy searches in the arrival directions of UHECRs. In addition to the review work, another pursued goal has been to produce a common full-sky map of UHECR arrival directions above 57 EeV to search for anisotropies through correlations with local extragalactic matter. The full-sky coverage allows eventual structures to stand out from the isotropic background with minimal exposure distortions. Special attention is given to the relative normalization of the respective exposures of the experiments by cross-calibrating the fluxes measured in declination ranges where the exposures overlap as a function of the energy. From the produced sky map, a comprehensive series of anisotropy searches is presented, and astrophysical implications are discussed.

Presentation type

oral

Authors: DI MATTEO, Armando (INFN and University of L'Aquila); SAGAWA, Hiroyuki (University of Tokyo); TKACHEV, Igor (Russian Academy of Sciences (RU)); TINYAKOV, Peter (Universite Libre de Bruxelles (ULB)); NONAKA, Toshiyuki (Institute for Cosmic Ray Research University of Tokyo)

Presenter: DI MATTEO, Armando (INFN and University of L'Aquila)

Session Classification: Oct.12PM1