Contribution ID: **96** Type: **Talk**

2022 report from the Auger-TA working group on UHECR arrival directions

Tuesday, 4 October 2022 10:00 (20 minutes)

The origin of ultra-high-energy cosmic rays (UHECRs) remains a mystery. The interactions of UHECRs with background photons restricts their propagation length to at most a few hundred megaparsecs. Because the distribution of extra-Galactic matter at such distances is anisotropic, we expect the angular distribution of UHECR arrival directions to bear information about this anisotropy. However, because UHECRs are deflected by poorly-known Galactic and extra-Galactic magnetic fields, the anisotropy is distorted and suppressed. In previous works of the Auger-TA anisotropy working group we presented full-sky searches for dipole and quadrupole modulations, as well as correlations with classes of nearby galaxies. Full-sky searches, combining data from both detectors, allow us to significantly reduce certain uncertainties compared to single-hemisphere results. In this contribution we update on those results with the most recent available data. Moreover we offer an interpretation of these results by comparing the experimental data to a suite of simulated datasets with varying composition and propagation models.

Primary authors: DI MATTEO, Armando; URBAN, Federico (CEICO, FZU); GOLUP, Geraldina; FARRAR, Glennys; RUBTSOV, Grigory; MARIŞ, Ioana; KIM, Jihyun; ANCHORDOQUI, Luis; KUZNETSOV, Mikhail; DELIGNY, Olivier; TINYAKOV, Peter; HIGUCHI, Rio; DE ALMEIDA, Rogerio; BISTER, Teresa; GIACCARI, Ugo

Presenter: URBAN, Federico (CEICO, FZU)