Contribution ID: **122** Type: **Talk**

UHECR anisotropy and extragalactic magnetic fields with the Telescope Array

Tuesday, 4 October 2022 11:40 (20 minutes)

We study the energy-dependent distribution of ultra-high energy cosmic ray arrival directions with respect to luminous matter in the local Universe. We use a specially designed test statistic (TS) that is robust to uncertainties of the galactic magnetic field. We generate realistic mock UHECR sets assuming various injected compositions, and different strengths of the extragalactic magnetic field (EGMF). Applying the TS to both mock sets and the Telescope Array Surface Detector data we constrain, for a given EGMF strength, the UHECR injected mass composition at energies above 10 EeV. We then compare the obtained results with the direct Telescope Array fluorescence measurements of the UHECR mass composition. Requiring that the TA composition measurements are compatible with the arrival direction distribution allows us to constrain the parameters of the EGMF.

Primary authors: KUZNETSOV, Mikhail (ULB & INR RAS); TINYAKOV, Petr (Universite Libre de Bruxelles (ULB))

Presenter: TINYAKOV, Petr (Universite Libre de Bruxelles (ULB))