

## **Search for composition-weighted correlations between UHECR events from the Pierre Auger Observatory and the Telescope Array with astrophysical gamma ray-sources**

We present a study connecting ultra-high energy cosmic rays (UHECR) events with gamma-ray astrophysical sources. We use UHECR data with energies greater than 80 EeV detected by the Pierre Auger Observatory and the Telescope Array. UHECR from extragalactic sources are likely made by protons and also light nuclei, as helium, and heavier nuclei. We consider several random mass compositions based on data. Deflection caused by galactic and extragalactic magnetic fields are taken into account, as well as a maximum distance given by the GZK cut-off for all possible different compositions. Gamma-ray sources are selected from different catalogues (TEVCAT, 2WHPS, 3FGL) taking into account the distance, type and flux. We include different astrophysical type of sources looking for statistical significant correlations with UHECR after trial corrections.

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