



Contribution ID : 275

Type : **Poster**

Anomalous cosmic-ray correlations revisited with a complete full-sky sample of BL Lac type objects

Tuesday, 22 October 2024 17:05 (115)

Cosmic rays with energies above 10^{19} eV, observed in 1999 - 2004 by the High Resolution Fly's Eye (HiRes) experiment in the stereoscopic mode [1], were found to correlate with directions to distant BL Lac type objects (BL Lacs, which constitute a subclass of blazars, are active galactic nuclei with jets pointing to the observer), suggesting non-standard neutral particles travelling for cosmological distances without attenuation. This effect could not be tested by newer experiments because of their inferior angular resolution. The distribution in the sky of BL Lacs associated with cosmic rays was found to deviate from isotropy, which might give a clue to the interpretation of the observed anomaly. However, previous studies made use of a sample of BL Lacs which was anisotropic by itself, thus complicating these interpretations. In this work authors use a recently compiled isotropic complete sample of BL Lacs and the same HiRes data to confirm the presence of correlations and to strengthen the case for the local large-scale structure pattern in the distribution of the correlated events in the sky.

Primary author(s) : KUDENKO, Maria (Lomonosov Moscow State University, The Institute for Nuclear Research of the Russian Academy of Sciences); Prof. TROITSKY, Sergey (INR RAS)

Presenter(s) : KUDENKO, Maria (Lomonosov Moscow State University, The Institute for Nuclear Research of the Russian Academy of Sciences)

Session Classification : Poster session

Track Classification : Astroparticle physics