

TeV blazars and the transparency of the Universe

Wednesday 29 August 2018 17:30 (15 minutes)

The Universe is expected to be opaque for gamma rays with TeV energies. However several distant blazars have been observed in TeV region. One possible solution to this puzzle is to assume that the same sources emit cosmic rays towards the Earth and the gamma rays observed are products of line of sight cosmic ray interactions. We examine viability of this scenario in the context of possible cosmic ray and secondary electromagnetic cascade deflections by the extragalactic magnetic field and the large scale structure magnetic field. To test the hypothesis we use recent estimates of filament distribution in the Universe and perform Monte Carlo simulations of primary and secondary particle propagation.

Primary author: Dr KUZNETSOV, Mikhail (INR RAS, Moscow)

Co-author: Dr KALASHEV, Oleg (INR RAS, Moscow)

Presenter: Dr KUZNETSOV, Mikhail (INR RAS, Moscow)

Session Classification: Extragalactic Science

Track Classification: Extragalactic