

Spectral hardening of cosmic TeV photons in realistic extragalactic magnetic fields

Friday 19 May 2017 10:35 (20 minutes)

Large-scale extragalactic magnetic fields may induce conversions between very-high-energy photons and axion-like particles (ALPs), thereby shielding the photons from absorption on the extragalactic background light. We consider realistic models of extragalactic magnetic fields obtained from large-scale cosmological simulations. Such simulated magnetic fields would have large enhancement in the filaments of matter. As a result, photon-ALP conversions would produce a significant spectral hardening for cosmic TeV photons respect to the simplified “cell” models previously considered in literature.

Primary author: Dr MONTANINO, Daniele (University of Salento & INFN, Lecce)

Co-authors: Dr ALESSANDRO, Mirizzi (University of Bari & INFN, Bari); Dr FRANCO, Vazza (INAF - Istituto di Radio Astronomia di Bologna); Dr MATTEO, Viel (SISSA-International School for Advanced Studies)

Presenter: Dr MONTANINO, Daniele (University of Salento & INFN, Lecce)

Session Classification: Session 15