

Secondary photons and neutrinos from distant blazars and the intergalactic magnetic fields

Thursday, 29 August 2013 17:42 (24 minutes)

Secondary photons and neutrinos produced in the interactions of cosmic ray protons and gamma rays emitted by distant Active Galactic Nuclei (AGN) with the photon background along the line of sight can reveal a wealth of new information about the intergalactic magnetic fields (IGMF), extragalactic background light (EBL), and the acceleration mechanisms of cosmic rays. The secondary photons may have already been observed by gamma-ray telescopes. With the inclusion of secondary photons the current upper limits on the extragalactic background light are significantly weakened and new limits are set for the intergalactic magnetic fields for a wide range of cosmic ray and gamma ray models. Recent results from IceCube may also hint at the first observation of secondary neutrinos. Ramifications for the cosmic backgrounds, magnetic fields, and AGN models will be discussed.

Presenter: ESSEY, Warren

Session Classification: High-energy gamma rays