

Blazars as astroparticle physics laboratories: the case of KUV00311-1938 (11+3)

Thursday 3 October 2019 09:00 (14 minutes)

Blazars are very bright gamma ray sources in the sky that are visible out to very large redshifts. Powered by material falling into a supermassive black hole, blazars have jets that can emit gamma rays up to TeV energies. As these TeV photons propagate through space they are expected to encounter ambient magnetic fields and extragalactic background light (EBL). The presence of magnetic fields can convert them to Axion like particles (ALPs), while the presence of the EBL absorbs the initial spectrum via pair production. We studied the multi-wavelength behaviour of KUV 00311-1938, a blazar with an unknown redshift, finding that a simple EBL model can explain the observed emission. We subsequently used the EBL model to constrain the redshift of the source.

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Session Classification: Thu morning session 1