ICRC2015

ICRC
The Astroparticle Physics Conference
34th International Cosmic Ray Conference
July 30 - August 6, 2015
The Hague, The Netherlands

Contribution ID: **583** Type: **Oral contribution**

Photon-neutrino flux correlations from hadronic models of AGN?

Thursday, 30 July 2015 14:00 (15 minutes)

Neutrino production in jetted AGN is linked to hadronic processes such as photomeson production. The same interaction predicts also high-energy photons, mostly via neutral pion decay. While neutrinos escape the source unattenuated, the hadronically produced high-energy photons and pairs initiate pair cascades in most cases which re-distribute their energy to lower frequencies where photons can escape the emission region. Realistic hadronic emission models of AGN jets take into account competing energy losses of injected/accelerated particles as well as all leptonic processes (owing to primary and secondary electrons). This may smear out any intrinsic correlation between emerging photon and neutrino fluxes.

The goal of this work is to investigate the degree of observable photon-neutrino flux correlations that is expected from hadronic AGN jet emission models. For this purpose the expected neutrino spectra from a number of hadronically modeled broadband spectral energy distributions (SEDs) of powerful blazars is calculated and compared to the photon fluxes at various frequencies by means of a correlation analysis. The results have implications for the search of the photon sources that are associated to the TeV-PeV neutrino events reported by neutrino observatories.

Collaboration

– not specified –

Registration number following ”ICRC2015-I/”

519

Primary author: REIMER, Anita (University of Innsbruck)

Presenter: REIMER, Anita (University of Innsbruck)

Session Classification: Parallel NU 01

Track Classification: NU-TH