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Semi-analytical Modelling of Time-variable Blazar Jet Spectra

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Abstract content

We present a detailed leptonic model for the spectral evolution of TeV blazars. Synchrotron emission is modelled, with the TeV component explained by both Inverse Compton upscattering of synchrotron photons and photons originating externally to the jet. The Broad Line Region and accretion disc are considered for the source of soft external target photons. We investigate the effects on the emission region's passage through the BLR to the evolution of the observed spectra. Taking into account time-travel effects, we have developed a fast kinetic-equation solving numerical code to fit the time-resolved X-ray and gamma-ray (MeV to TeV) spectra from current satellite observatories and imaging Cherenkov telescopes. Predictions are presented for the averaged TeV photon spectra on timescales of 10 - 30 minutes. The possible scenario of orphan TeV flares due to the emission region's emergence from the BLR is proposed.

If this papers is presented for a collaboration, please specify the collaboration

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 3 (OG part 2), pages 909-912

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