

## **Correlation between emission-line luminosity and gamma-ray dominance in the blazar 3C 279**

Despite numerous studies, the origin of gamma-ray emission of blazars, Active Galactic Nuclei (AGN) with a jet aligned closely to the line of sight, is still debated. In particular, it is not entirely clear whether the gamma-ray emission is produced by leptonic or hadronic processes. In this study, we are testing the leptonic scenario for the Flat Spectrum Radio Quasar (FSRQ) 3C 279, assuming that the gamma-ray emission is generated by inverse Compton scattering of soft external photons from the Broad Line Region (BLR). For this purpose we use a 10-year data set of the source including publicly available optical spectroscopic monitoring data and Fermi-LAT data, and search for a possible correlation between the Compton dominance and the emission line luminosity. We find that the simultaneous measurements of these quantities display no correlation. Assuming a time lag between the emission line appearance and the Compton dominance response, the discrete correlation function (DCF) analysis shows a positive correlation at a time lag of 25 d and an anti-correlation at 60 d, indicating that the changes in the Compton dominance lag behind the changes in emission line luminosity. We consider the positive correlation to arise due to light travel time effects and derive constraints on the location of the gamma-ray emitting zone in the jet. We propose also a tentative interpretation of the observed anti-correlation as due to accretion disk activity.

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