

# Radiative Signatures of Relativistic Reconnection in Blazar Jets

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Relativistic magnetic reconnection, a process which converts magnetic energy to particle acceleration, is an ideal mechanism for the multi-wavelength spectral and temporal variability observed in blazar jets. By coupling recent two-dimensional particle-in-cell simulations of relativistic reconnection with a time-dependent radiative transfer model, we compute the non-thermal emission from a chain of plasmoids, namely quasi-spherical blobs of plasma containing relativistic particles and magnetic fields formed during a reconnection event. Here, I will show that our derived photon spectra display characteristic features observed in both BL Lac sources and flat spectrum radio quasars. A differentiation in modeling the two subclasses is achieved by varying the strength of the photon fields external to the jet, the jet magnetization, and the number of electron-positron pairs per proton contained within. Additionally, I will present several observational signatures of our model including the statistical properties of plasmoid-powered flares, the correlation of flaring events in multi-wavelength bands, and the power-spectral density of our reconnection driven light curves.

**Authors:** Dr CHRISTIE, Ian (Northwestern University (CIERA)); Dr PETROPOULOU, Maria (Princeton University); Prof. SIRONI, Lorenzo (Columbia University); Prof. GIANNIOS, Dimitrios (Purdue University)

**Presenter:** Dr CHRISTIE, Ian (Northwestern University (CIERA))

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