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Simulating Blazar SEDs using a Time Dependent Leptonic Model
CHRISTOPHER DILTZ, Ohio University, MARKUS BOETTCHER, North-West University — We present simulations for a time dependent leptonic model to reproduce characteristics found in spectral energy distributions of flat spectrum radio quasars (FSRQ's) and BL Lac objects. Blazars are known for their lack of emission lines and relatively featureless continuum radiation emission. Conversely, FSRQ's present with emission lines as well as contributions from external radiation fields surrounding a supermassive black hole (SMBH). We simulate time evolved SEDs from a series of different input parameters to understand the effects these input parameters have on the output. Our model is able to produce continuum radiation from synchrotron and synchrotron self-comptonization (SSC) from a time evolved distribution of electrons moving relativistically along the axis of the blazar jet. The model also considers contributions from external radiation fields and their subsequent scattering to higher energies due to external Compton processes. The results of our simulations agree well with the expected normalization and power law dependencies for the overall flux of the spectral energy distributions from the input parameters involved.

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