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## Time-dependent injection as a model for rapid blazar flares

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The detection of very rapid flares on the order of minutes in blazars has spawned a lot of theoretical activity. Even though many models take time-dependent effects (such as varying magnetic fields, etc) into account, a time-dependent nature of the injection process is usually omitted. In this presentation it is shown using the standard one-zone model that time-dependent injection has strong effects on the resulting spectra of blazars. Due to the time-dependency of the injection the particles cannot reach an equilibrium state and the kinetic equation for the electron distribution function becomes non-linear. This leads to (i) much faster electron cooling and (ii) a change in the cooling process after some time depending on the injection parameters. This change in the cooling process has direct and very significant effects for the spectrum of a flaring blazar.

### Collaboration

– not specified –

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