Contribution ID: **40** Type: **Contributed**

Modelling blazar SEDs and spectral variability with time-dependent diffusive shock acceleration

Tuesday, 13 April 2021 15:45 (15 minutes)

In recent work, we have developed a self consistent two-zone model of time-dependent diffusive shock acceleration in the relativistic jets of blazars and the resulting multi-wavelength spectral and variability features. In this paper, we report the results of detailed fitting of this model to recent multi-wavelength data from two blazars detected during bright gamma-ray flares by Fermi-LAT and H.E.S.S.: the flat spectrum radio quasars 3C 279 and PKS 1510-089. Simultaneous fits to snap-shot SEDs and multi-wavelength light curves are presenbted. Well sampled, continuous GeV gamma-ray light curves by Fermi-LAT are crucial to tightly constrain the energy-dependent mean-free path to pitch-angle scattering of relativistic electrons and its temporal change during the passage of a mildly relativistic shock, along with changes of other emission-region parameters. This allows deep insights into the nature of hydromagnetic turbulence induced by the shock.

Primary author: BOETTCHER, Markus (North-West University)

Presenter: BOETTCHER, Markus (North-West University)

Session Classification: Exploring the Cosmos: AGN-1

Track Classification: AGN