

8th Heidelberg International Symposium on High-Energy Gamma-Ray Astronomy

Contribution ID: **120** Contribution code: **EGAL**

Type: **Poster**

Plasma instabilities in gamma-ray bright AGN

Monday 2 September 2024 09:54 (1 minute)

I will review our recent advances in the study of the origin and development of plasma instabilities, namely Kelvin-Helmholtz and Current-Driven instabilities, at the base of quasar jets such as 3C 279, 3C 273 or 3C 111, which are variable or continuous gamma-ray emitters. We study the evolution of perturbed jets via relativistic (ideal) magnetohydrodynamical numerical simulations. An equilibrium state is generated using 1D simulations, which are used as set-up for 2D or 3D simulations. In my talk, I will focus on 2D simulations of instability development in axisymmetric magnetised jets, where we test the stability properties of different magnetic field configurations. As a result of our simulations, we estimate the amount of kinetic energy that can be dissipated and would be relevant to very-high-energy emission.

Primary author: HOCHE, Yannik (University of Valencia)

Presenter: HOCHE, Yannik (University of Valencia)

Session Classification: Poster hang