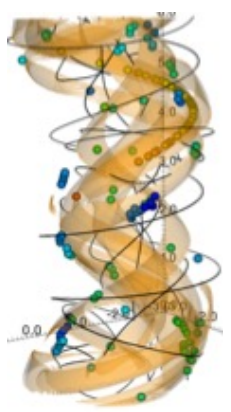


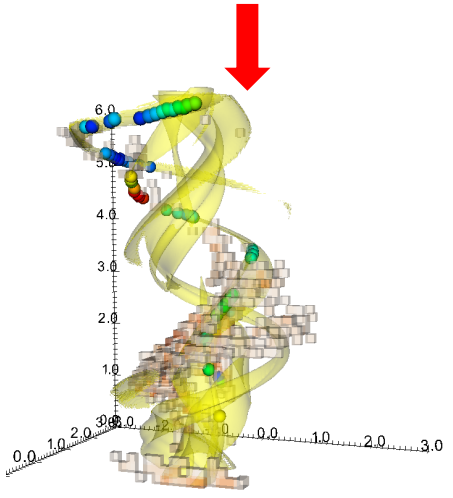
Direct Proof of UHECR acceleration by Magnetic Reconnection in Relativistic MHD Jets and Origin of Very High Energy Emission

(E. de Gouveia Dal Pino - IAG-USP, w/ Medina-Torrejon, Kadowaki, Kowal, Rodriguez-Ramirez)

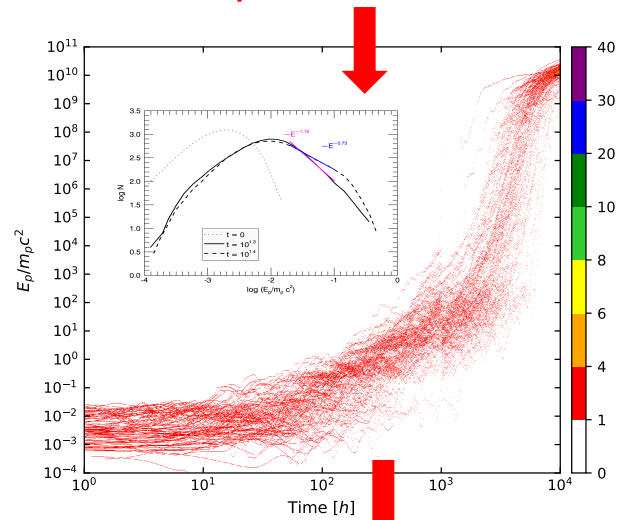
We performed **relativistic MHD simulations of jets** subject to kink instability which drives **TURBULENCE** and **FAST RECONNECTION**



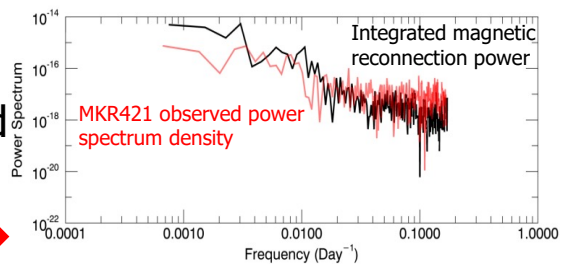
Injected test particles: are accelerated by (Fermi) **MAGNETIC RECONNECTION**



CRs: accelerated to 10^{18} - 10^{20} eV !
-> energy enough to produce TeV Gamma-Rays and Neutrinos !!



Gamma-Ray flux variability explained by reconnection events



SED of blazar explained by reconnection acceleration

