

Vulcano Workshop 2018 - Frontier Objects in Astrophysics and Particle Physics



Contribution ID: 5

Type: **not specified**

AGN outflows as accelerator of CRs and neutrinos

Various observations are revealing the widespread occurrence of mildly relativistic wide-angle AGN outflows, likely launched from accretion disks around supermassive black holes, and interacting strongly with the gas of their host galaxy.

During the interaction, strong shocks are expected to form that can accelerate relativistic particles. The interactions of shock-accelerated particles with surrounding interstellar medium can generate gamma-rays and neutrinos via the decay of neutral and charged pions generated in inelastic proton-proton collisions.

I will show the predictions for the cumulative gamma-ray and neutrino emission from AGN outflows obtained by a state-of-the-art semi-analytic model of galaxy formation.

This is based on galaxy interactions as triggers of AGN accretion and on expanding blast wave as the mechanism to communicate outwards the energy injected into the interstellar medium by the active nucleus. I will compare the model predictions with the most recent Fermi and IceCube data.

Primary author: Dr LAMASTRA, Alessandra (INAF-OAR ASI - SSDC)

Co-authors: STAMERRA, Antonio (TO); Prof. GUETTA, Dafne (OAR INAF); Dr FIORE, Fabrizio (INAF-OAR); Dr ANTONELLI, Lucio Angelo (INAF-Osservatorio Astronomico di Roma & ASDC); Dr MENCI, Nicola (INAF-Osservatorio Astronomico di Roma)

Presenter: Dr LAMASTRA, Alessandra (INAF-OAR ASI - SSDC)