



Contribution ID: 147

Type: Oral

## Cosmic rays and neutrinos from blazars with nuclei injection

*Friday 11 August 2017 16:15 (15 minutes)*

We test the hypothesis that blazars are sources of Ultra-High Energy Cosmic Rays (UHECR), considering acceleration of isotopes heavier than Hydrogen. We perform numerical simulations of CR interactions using the NeuCosmA code. The injected isotope may efficiently disintegrate at high energies, thus producing a population of lighter secondaries. We study the ejected CR composition and neutrino spectra for different blazar classes: Flat-Spectrum Radio Quasars (FSRQs) and BL Lacs. We conclude that the former contribute significantly to the diffuse neutrino flux, whose maximal energy depends on the injected composition. BL Lacs, on the other hand, are found to dominate the UHECR flux. We show that blazars are able to power the UHECRs, while not violating the most recent IceCube limits on blazar neutrinos.

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**Session Classification:** Multi-messenger

**Track Classification:** Multi-messenger (incl. gravitational waves) and nuclear astrophysics