

## A connection between TeV gamma-ray flux and cosmic rays in the Seyfert galaxy 1068

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Hadronic interactions in cosmic-ray propagation can produce charged and neutral pions. The neutron pion decays into photons, while positrons and electrons are produced due to the decay of charged pions. The basic mechanisms that can produce gamma-ray fluxes associated with jets of cosmic rays are the decay of neutral pions electron/positron bremsstrahlung, and inverse Compton scattering. These cascade processes show a correlation between the upper limit on the integral GeV - TeV gamma-ray flux and the ultra-high energy cosmic rays (UHECR) luminosity. We calculate the UHECR cosmic-ray luminosity for the 1068 galaxy using the upper limits on TeV gamma-ray flux by H.E.S.S. and MAGIC Observatories. We compare our neutrino flux to current estimates of NGC 1068 neutrino flux.

**Primary author:** SASSE, Rodrigo (Federal University of Latin American Integration - UNILA)

**Presenter:** SASSE, Rodrigo (Federal University of Latin American Integration - UNILA)

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