

Gamma-ray emission from extended jets of LLAGNs - NGC315 and NGC4261

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Despite occupying ~40% of the local Universe, Low Luminosity Active Galactic Nuclei (LLAGNs) are less explored due to their faintness. Detection of a few in gamma rays by Fermi-LAT allows us to constrain the physical parameters of the jet by modeling their broadband spectral energy distributions. While a one-zone model explains the broadband emission up to a few GeV, another component is required to explain the excess beyond that. An extended jet for both NGC 315 and NGC 4261 has been seen in radio and X-rays. While the spectral index of X-ray emission implies a synchrotron origin, we find that the excess at GeV energies can be successfully explained by the inverse Compton scattering of the starlight from the host galaxy by the same electron population, in both cases. This observation suggests that electrons can be accelerated to ultrarelativistic energies at extended scales.

Track

AGN

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