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Gamma-ray Emission of Young Radio Galaxies

Abstract content

Here we present a simple model for evolution of young radio galaxies. These objects are known to form a numerous class of extragalactic radio sources, characterized by the synchrotron spectrum peaking around GHz frequencies ('GPS sources'). Based on the proposed model, we argue that inverse-Compton emission of ultrarelativistic electrons in sub-kpc-scale lobes of GPS galaxies should extend up to GeV photon energies, and that it should be strong enough to be detectable by the GLAST satellite. Thus, GPS sources are expected to constitute a relative numerous class of extragalactic gamma-ray sources, in addition to but different than the well-known class of blazars. We emphasize that the detection of the expected gamma-ray emission from GPS radio galaxies would enable to constrain several crucial parameters of extragalactic jets in general.

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Summary

Reference

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