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Spectral studies of Flat Spectrum Radio Quasars: constraining models at GeV energies

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Abstract content
   (Max 300 words)
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Active Galactic Nuclei (AGNs) at the centres of distant galaxies are understood to be powered by the gravitational energy of supermassive black holes accreting matter from their surroundings and releasing extraordinary amounts of energy through two symmetric jets of ultrarelativistic particles and photons. Blazars are a class of AGNs with one jet directed towards us. A subclass of them are called Flat Spectrum Radio Quasars (FSRQ), which are among the brightest AGNs and have been detected up to redshift z > 3. We have analysed 5.5 years of data (2008-2014) from the Large Area Telescope (LAT) of the Fermi gamma-ray space observatory and performed spectral analysis of bright FSRQs in the 100 MeV-200 GeV energy range. Our studies focus on the spectral features in the GeV domain in connection with different models of gamma-ray emission. This emission might be produced inside the so-called broad line region, filled with gas clouds. We investigate the constraints given by the opacity of radiation fields inside the broad line region.

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Main supervisor (name and email)
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