

## Absorption features in gamma-ray spectra of BL Lac objects

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The production site of gamma rays in blazars is closely related to their interaction with the photon fields surrounding the active galactic nucleus. In this work we discuss an indirect method that may help to unveil the presence of ambient structures in BL Lacs through the analysis of their gamma-ray spectrum.

Passing through structures at different distances from the black hole, gamma rays interact with the corresponding photon fields via gamma-gamma pair production, producing absorption features in their spectral energy distribution. An interaction of the gamma-ray photons with a putative broad-line region may reduce the gamma-ray flux only if its production site were very close to the central engine. On the other hand, if jet photons interact with optical-UV seed photons produced by a pc-scale narrow-line region, the consequent gamma-gamma process may cause absorption features at a few hundreds GeV.

Sources with spectra reaching TeV energies, such as HBLs and EHBLs (extreme blazars), may represent exceptional probes to investigate this topic. In this regard, we discuss recent observations of sources which may show evidence of such absorption features in their gamma-ray spectra.

Finally, we discuss how sub-TeV absorption features in the spectra of BL Lacs may affect their broadband modeling, and eventually represent a powerful diagnostic tool to constrain the gamma-ray production site and the jet environment.

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