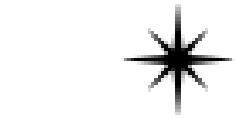

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Gamma-ray production in supermassive black hole binary OJ 287

OJ 287 is one of the most studied BL Lac objects with very long optical measurements which spectrum has been well measured through radio to X-ray band. The most outstanding characteristic of OJ 287 is its 12-year period, which is discovered in the optical range and has also been confirmed in the X-ray band. OJ 287 is supposed to be a binary black hole system in which a secondary black hole passes the accretion disk of the primary black hole and produces two impact flashes per period. It has also been proposed to be a GeV - TeV source. Observations of OJ 287 in the GeV –TeV energy range reveal the variable gamma-ray connected with the flare activity of this object. The spectral energy distributions of blazars consist of two broad peaks. The first, lower frequency peak is due to the synchrotron emissions of relativistic electrons in the jet. Leptonic and hadronic emission mechanisms are considered to describe the second, higher frequency spectrum part. The Inverse Compton emissions of the same electrons (synchrotron self-Compton model) or combined with an external Compton mechanism are considered in the leptonic scenario. The last one supposes the existence of the external to jet photon cloud. The high energy spectrum part is also supposed to be generated due to the acceleration of the cosmic ray hadrons in shock produced by outflow, which expands and then collides with the wind of the primary black hole. The detection of GeV –TeV energy fluxes can help find the parameters of the configuration of the two-black hole system.

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