

Gamma-rays from active region within stationary inhomogeneous non-local AGN jet

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Two stages of non-thermal emission from relativistic jets in active galaxies can be distinguished: a low level persistent emission and a short period flaring emission. It has been recently proposed that both stages are produced in the inner (parsec scale) jet region when electrons are expected to be accelerated to TeV energies. The low level persistent emission originate in the extended, parsec scale jet but the flaring emission is produced by electrons accelerated in small scale localized region of the jet.

We modify the stationary, non-local, inhomogeneous AGN jet model for the stationary jet emission by introducing a localized flaring active region within the stationary jet which physical parameters differ significantly from those in the extended large scale jet. In such two component jet model the radiation produced by electrons in the stationary part of the jet can interact with particles present in the active region of the jet and the radiation produced in the active region of the jet can interact with electrons in the stationary jet. We show how these different emission components depends on the propagation of the active region within the stationary jet. Their evolution in time can be tested with the future observations with the gamma-ray observatories.

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