

Multiwavelength observations in 2019-2020 of a new very-high-energy gamma-ray emitter: the flat spectrum radio quasar QSO B1420+326

Tuesday, 13 April 2021 15:30 (15 minutes)

The flat-spectrum radio quasar QSO B1420+326 underwent an enhanced gamma-ray flux state seen by Fermi-LAT at the turn of 2019/2020. Compared to the low state both the position and luminosity of the two spectral energy distribution peaks changed by at least two orders of magnitude. The high state resulted in the discovery of the very-high-energy (>100 GeV) gamma-ray emission from the source by the MAGIC telescopes. The organized multiwavelength campaign allow us to trace the broadband emission of the source through different phases of the flaring activity. The source was observed by 20 instruments in radio, near-infrared, optical, ultra-violet, X-ray and gamma-ray bands. We use dedicated optical spectroscopy results to estimate the accretion disk and the dust torus luminosity. The optical spectroscopy shows a prominent FeII bump with flux evolving together with the continuum emission and a MgII line with varying equivalent width. The gamma-ray flare was accompanied by a rotation of the optical polarization vector and emission of a new superluminal radio knot. We model spectral energy distributions in different flare phases in the framework of combined synchrotron-self-Compton and external Compton scenario in which the shape of the electron energy distribution is determined from cooling processes.

Primary author: SITAREK, Julian (University of Lodz)

Presenter: SITAREK, Julian (University of Lodz)

Session Classification: Exploring the Cosmos: AGN-1

Track Classification: AGN