

H.E.S.S. observations of the FSRQ PKS 1510-089 and its long-term evolution

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Abstract content

The governing process behind the variability of blazars is still unknown. Hence, the collection of long-term data on individual sources is an important step in order to unlock this unknown. The flat spectrum radio quasar (FSRQ) PKS 1510-089 has been observed by H.E.S.S. at VHE gamma-rays ($E > 100 \text{ GeV}$) since the discovery in 2009. A much denser monitoring effort has been started in 2015 in order to achieve the important detection of PKS 1510-089 during quiescence. The latter implies efficient particle acceleration beyond pc-scales from the black hole, since at smaller distances the strong absorption by the BLR inhibits the emission of VHE photons. The monitoring is complemented by data at HE gamma-rays ($E > 100 \text{ MeV}$) from Fermi, as well as X-ray and optical data from Swift and ATOM. The densely sampled lightcurves allow for detailed correlation analyses – yet, no obvious correlations can be found between the VHE lightcurve and the multiwavelength data sets, indicating a non-trivial interplay of the jet processes. This makes this FSRQ difficult to interpret within a unique theoretical framework.

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