

Search for long term variability of HESS J1745-290 at the centre of the Galaxy

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The galactic center (GC) is a prime spot for VHE gamma ray observations, with both point sources and diffuse emission, one of which is the H.E.S.S. source known as HESS J1745-290, whose position is notably compatible with the supermassive black hole SgrA*.

We provide here a study of the variability of HESS J1745 in the GC using all H.E.S.S. data available since 2004. We perform the first spectro-morphological maximum likelihood analysis of this source and the diffuse VHE emission (DE) around the GC, which allows us to separate them and provides a natural way to re-calibrate the GC source emission to limit systematic effects. Then, using the results of this analysis, we derive light curve of the central source and the diffuse emission over the last 16 years, in order to provide a light curve of the central source re-calibrated by the DE.

No long term, yearly, variability is found over this period. A detailed analysis of the sensitivity of H.E.S.S. to variations of this specific source over 16 years shows that flux variations larger than 25% can be excluded.

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Primary author: ZOUARI, Samuel (A)

Presenter: ZOUARI, Samuel (A)

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