



ID de Contribution: 23

Type: Oral presentation

Studying the very high energy gamma ray emission at the center of the galaxy.

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The galactic center (GC) is one of the most actively surveyed region for very high energy photons (noted VHE, over 100 GeV), by the High Energy Stereoscopic System (H.E.S.S) in our case. In addition to a diffuse emission in the central few 100 pc, one the strongest sources in the gamma ray sky, HESS J1745-290, is located at the GC, and is compatible with Sgr A, *the supermassive black hole at the center of the galaxy, which is highly suspected to contribute to the VHE emission in this region in some form.*

Though the exact origin of this particular source is still unknown due to the uncertainty on its position and size (both Sgr A and a pulsar wind nebula are compatible and plausible origins), and although C.T.A (Cherenkov Telescope Array), the next major project for VHE astronomy, is hoped to be able to better identify sources in general, the improvement of data analysis for H.E.S.S and the amount of data collected might allow us to uncover some intrinsic properties of HESS J1745-290 already. For instance, a “short” time scale variability (a few years to a few hours as well) would strongly suggest a black hole origin for this source, since Sgr A is also known to be subject to regular few-hour flares in X rays and infrared.*

Our aim is to exploit the 15 years of H.E.S.S data at our disposal on the GC, as well as new numerical tools, in particular those brought by the gammapy library, to assert both the spectrum of the central source without contamination from the diffuse emission, and whether it has been variable on the year scale during that time. The spectral analysis relies on both spectral and spatial modelisation, which is especially relevant considering the extended diffuse emission covering this region.

We report preliminary results of this analysis about the intrinsic spectrum of HESS J1745-29 and its year to year variability.

Field

Not in the above

Day constraints

Lundi, Mardi, Jeudi ou Vendredi

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