

Study of pulsar wind nebula candidates seen with H.E.S.S.

Promising regions within the Galactic plane may offer more insight on the transition from younger to older pulsar wind nebulae (PWNe) evolution, as the observed very-high-energy emission provide constrains on their morphology and physical mechanisms at play. In particular, we focus on the 312° galactic longitude field of two degrees containing five powerful pulsars. Their rotational energies range from 10^{35} to 10^{37} $\text{erg}\cdot\text{s}^{-1}$ for ages between 13.6 and 62.8 kyr. Extended emission has been recently probed with H.E.S.S. in their vicinity, notably around the pulsar PSR J1413-6205 in the TeV domain.

We processed 124 hours of H.E.S.S observations with an analysis algorithm improving background fitting for the study of extended diffuse sources. We applied a three-dimensional likelihood analysis technique to model the different sources in the region of interest using a configuration optimized to enhance the collection area at the highest energies.

This presentation will focus on the discussion of new detections in the context of PWN-candidate searches and on the understanding of systems that might be transitioning from a PWN to a TeV gamma-ray halo.

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