

Revisiting HESS J1809–193 — a very-high-energy gamma-ray source in a fascinating environment

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HESS J1809–193 is one of the unidentified very-high-energy gamma-ray sources in the H.E.S.S. Galactic Plane Survey (HGPS). It is located in a rich environment, with an energetic pulsar and associated X-ray pulsar wind nebula, several supernova remnants, and molecular clouds in the vicinity. Furthermore, HESS J1809–193 was recently detected at energies above 56 TeV with HAWC, which makes it a candidate for a PeVatron, i.e., a source capable of accelerating cosmic rays up to PeV energies.

We present a new analysis of the TeV gamma-ray emission of HESS J1809–193 with H.E.S.S., based on improved analysis techniques. We find that the emission is best described by two components with distinct morphologies and energy spectra. We complement this study with an analysis of Fermi-LAT data in the same region. Finally, taking into account also further multi-wavelength data, we interpret our results both in a hadronic and leptonic framework.

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