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Revisiting the PeVatron candidate MGRO J1908+063 with an updated H.E.S.S. analysis

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Detecting and studying galactic gamma-ray sources emitting very-high energy photons sheds light on the acceleration and propagation of cosmic rays presumably created in these sources. Currently, there are few sources emitting photons with energies exceeding 100 TeV. In this work we revisit the unidentified source MGRO J1908+063, initially detected by Milagro, using an updated H.E.S.S. dataset and analysis pipeline. The vicinity of the source contains a supernova remnant and pulsars as well as molecular clouds. This makes the identification of the primary source(s) of local cosmic rays as well as the nature of the gamma emission challenging, especially in light of the recent HAWC detection of the high energy tail of its spectrum. Exploiting the better angular resolution and spectral coverage of H.E.S.S. as compared to HAWC, we investigate the morphology of the source as well as its spectral properties and model different scenarios of gamma-ray production.

Keywords

pevatrons, galactic gamma rays, pulsars, supernova remnant, tev halos

Collaboration

H.E.S.S.

other Collaboration

Subcategory

Experimental Results

Primary authors: KOSTIUNIN, Dmitriy (Z_HESS (High Energy Steroscopic System));   MOHRMANN, Lars (FAU Erlangen); DE ONA WILHELMI, Emma (CSIC-IEEC); JOSHI, Vikas (Max Planck Institute for Nuclear Physics Heidelberg);   OHM, Stefan (Z_HESS (High Energy Steroscopic System));   MITCHELL, Alison (UZH);   FOR THE H.E.S.S. COLLABORATION

Presenter: KOSTIUNIN, Dmitriy (Z_HESS (High Energy Steroscopic System))

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