Abstract Submitted
for the APR21 Meeting of
The American Physical Society

Study of the eHWC J1825-134 Region with the Newest HAWC Data[1] DEZHI HUANG, Michigan Technological University, HAWC COLLABORATION — eHWC J1825-134 is one of the brightest galactic gamma-ray sources above tens of TeV in the High Altitude Water Cherenkov Gamma-Ray Observatory (HAWC) field of view. In recent HAWC studies, it was revealed that a new point source inside this region has a spectral energy distribution (SED) extending beyond 200 TeV without any cutoff. These ultra high energy gamma-rays could be either produced by PeV electrons up-scattering the cosmic microwave background (CMB) photons through Inverse Compton scattering (IC) or by PeV cosmic rays colliding with the ambient gas. The location of this new point source is near a high density giant molecular cloud. Investigating HAWC data shows that eHWC J1825-134 is a candidate for a galactic PeVatron that accelerate particles up to PeV energies.

[1]This work support by NSF Award: 1914549 - "WoU-MMA: Tracing Cosmic-Ray Origin and Transport Using HAWC and Multi-Wavelength Data" and 1607415 - "Investigating Large Scale Structures and Galactic Plane Morphologies at TeV Energies with the HAWC Observatory".

Dezhi Huang
Michigan Technological University

Date submitted: 08 Jan 2021 Electronic form version 1.4