

An extreme Galactic accelerator: HESS J1825-137 and the search for Galactic PeVatrons

Very High Energy (VHE) gamma-ray astronomy uses gamma rays, tracers of high energy particles in their source environment, to provide information about the origin of cosmic rays. Galactic accelerators are thought responsible for cosmic rays up to at least the 'knee' – a spectral feature at $\sim 10^{15}$ eV. Recently, the HAWC experiment have produced the first sky maps of our galaxy at gamma-ray energies > 100 TeV, providing evidence of Galactic 'PeVatrons' – accelerators reaching PeV energies. Among these, HESS J1825-137 stands out as one of the brightest > 100 TeV sources. In this talk, I will present a detailed study of this extreme Galactic accelerator and the insights that can be gained with relevance to the search for PeVatrons .