

## **HESS J1831-098: a hadronic PeVatron or a very energetic pulsar wind nebula?**

*Monday, 4 July 2022 15:45 (15 minutes)*

We will present the detection, spectral and morphological characterization of HESS J1831-098 with H.E.S.S. The source was previously identified as a hotspot in the H.E.S.S. Galactic Plane Survey catalogue. The hard power-law spectrum extends with an index of  $\sim 2.1$  up to  $>30$  TeV with no indication for a cut-off, making HESS J1831-098 an interesting PeVatron candidate. The HAWC point source 3HWC J1831-095 is located in the vicinity of HESS J1831-098 and has similar spectral properties, supporting the hypothesis of an association of these two objects. We will discuss the origin of the VHE gamma-ray emission of HESS J1831-098 in the context of a possible association with the powerful pulsar PSR J1831-0952 or with a dense molecular cloud illuminated by energetic particles escaped from a nearby SNR. In both scenarios, the hard spectrum of this H.E.S.S. source clearly testifies to the presence of an extreme particle accelerator, possibly a PeVatron.

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**Session Classification:** Contributed Talks