

Testing for a "Crab-like" Emission Tail above 10 GeV from the Vela Pulsar and PSR B1706-44 using combined H.E.S.S. & Fermi-LAT data.

Monday 2 September 2024 09:13 (1 minute)

Measuring pulsar spectra in the tens of GeV range is essential for constraining their high-energy emission models. However, this task is complicated by the fact that, in this energy domain, *Fermi*-LAT suffers from limited statistics, and the sensitivity of ground-based telescopes is restricted.

In this study, we combine data obtained with the largest H.E.S.S. telescope (CT-5) and *Fermi*-LAT on the Vela pulsar and PSR B1706-44 to precisely measure their spectra in the 1-100 GeV range. By fully accounting for the response functions of both instruments in a joint spectral fit above 10 GeV, we are able to detect significant curvature in the spectra of these two sources. This curvature strongly disfavors the onset of a power-law tail for Vela and PSR B1706-44, distinguishing them from the Crab pulsar. We discuss the possible implications of these results on our understanding of emission mechanisms at play in pulsars.

Primary authors: DJANNATI-ATAÏ, Arache (APC, CNRS - Paris Cité University); REGEARD, Maxime (APC, IN2P3, CNRS, Université Paris-Cité)

Co-author: H.E.S.S. COLLABORATION

Presenter: REGEARD, Maxime (APC, IN2P3, CNRS, Université Paris-Cité)

Session Classification: Poster hang