

Discovery of Multi-TeV Pulsations from PSR J1509-5850 with H.E.S.S.

Tuesday 3 September 2024 15:00 (15 minutes)

We report on the discovery of multi-TeV gamma-ray pulsations from PSR J1509-5850 with the H.E.S.S. array of imaging atmospheric Cherenkov telescopes. The light curve above 500 GeV is similar to the one obtained in the multi-GeV range with Fermi-LAT with no significant evolution with increasing energy.

The pulsed spectrum, as measured in the 500 GeV-10 TeV range, displays a hard index and is reminiscent of the spectrum of the Vela P2 pulse. After the Crab and Vela pulsars, PSR J1509-5850 is the third one detected in the Very-High-Energy domain (>100 GeV) and the second one displaying a hard and multi-TeV spectral component. We will compare the properties of the two multi-TeV pulsars and discuss the implications for high energy emission models of pulsars.

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

Presenter: DJANNATI-ATAÏ, Arache (APC, CNRS - Paris Cité University)

Session Classification: Parallel 1