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Tipo: **Experimental part: Review of the latest results**

## **The energy-dependent morphology of the pulsar wind nebula HESS J1825-137 seen by the Fermi-LAT: investigating its PWN / gamma-ray halo nature**

Taking advantage of more than 11 years of Fermi-LAT data, we perform a new and deep analysis of the pulsar wind nebula (PWN) HESS J1825-137. We present the results of the spectral analysis and of the first energy-resolved morphological study of the PWN HESS J1825-137 from 1 GeV to 1 TeV. This PWN is an archetypal system making it a perfect laboratory for studying particle transport mechanisms. Combining this analysis with recent HESS results enables us to constrain the particle transport mechanisms and to investigate the PWN - TeV halo nature of this source

**Autori principali:** PRINCIPE, Giacomo (Istituto Nazionale di Fisica Nucleare); Dr. MITCHELL, Alison (ETH Zurich); FUNK, Stefan (ECAP - Erlangen Centre for Astroparticle Physics); HINTON, Jim (MPIK); CAROFF, Sami (PhD); PARSON, Daniel

**Relatore:** PRINCIPE, Giacomo (Istituto Nazionale di Fisica Nucleare)