

## STeVECat, the Spectral TeV Extragalactic Catalog

The three main collaborations operating the current generation of imaging atmospheric Cherenkov telescopes (IACTs: H.E.S.S., MAGIC, VERITAS) publish their gamma-ray data in different formats and repositories. Extragalactic sources are highly variable at very-high energies (VHE,  $E > 100$  GeV), and a unified repository would enable joint analyses of collections of extragalactic VHE spectra. To this aim, we have developed the Spectral TeV Extragalactic Catalog, STeVECat, which gathers high-level products of IACT observations from 1992 to 2021. We selected all publications in journals referenced in TeVCat that presented archival spectra with at least two points. We compiled the corresponding spectral data and formatted them following the convention adopted in available public repositories (GammaCat and VTSCat). In addition to spectral points with associated physical units, meta-data feature observation periods, livetime, excess counts over background and significance, as well as the coordinates, types and redshifts of the sources whenever available. STeVECat combines observations from 270 journal publications, compared to 72 in the previous reference compilation of extragalactic gamma-ray spectra (Biteau & Williams, 2015). STeVECat is the most extensive set of VHE extragalactic spectra collected so far, with more than 365 spectra from 70 sources. The full catalog can readily be loaded with GammaPy, the Science Analysis Tools selected by the Cherenkov Telescope Array Observatory. Our compilation efforts enable population studies of extragalactic gamma-ray sources, studies of the GeV-TeV connection, and studies of absorption on the extragalactic background light.

**Primary author:** GRÉAUX, Lucas (IJCLab)

**Co-authors:** Prof. WILLIAMS, David A. (Santa Cruz Institute for Particle Physics and Department of Physics, University of California); Prof. BITEAU, Jonathan (Université Paris-Saclay, CNRS/IN2P3, IJCLab); NIEVAS ROSILLO, Mireia (IAC); Dr HERVET, Olivier (Santa Cruz Institute for Particle Physics and Department of Physics, University of California); Dr HASSAN, Tarek (CIEMAT)

**Presenter:** GRÉAUX, Lucas (IJCLab)

**Session Classification:** Contributed posters