BL Lac Object 1ES 0647+250, a decade of MWL observations

Jorge Otero-Santos, Daniela Dorner, Daniel Morcuende, David Paneque, Vandad Fallah Ramazani, Elisa Prandini, Giacomo Bonnoli on behalf of the MAGIC and *Fermi-*LAT Collaborations and MWL partners

July 2021

This contribution focuses on the long-term MAGIC and multiwavelength (MWL) study of the high-peaked BL Lac object 1ES 0647+250, one of the very few distant blazars detected in very-high-energy (VHE, E > 100 GeV) gamma rays during non-flaring activity. This blazar was detected by the MAGIC telescopes between 2009 and 2011 during its low activity state, and in several periods of enhanced activity with an increase of the VHE flux of one order of magnitude. We collected more than 10 years of MAGIC and MWL data to study the long-term evolution of the source. We performed the spectral characterization of the VHE emission of this blazar for the different emission states in which it was detected by MAGIC. Moreover, the SEDs for each period were determined. Finally, an empirical estimation of the distance of 1ES 0647+250 was performed using the joint *Fermi*-LAT and MAGIC spectra.

Additionally, the MWL data set collected for this work will serve as seed for further studies, including detailed studies of the broad-band spectral energy distribution for different activity levels and multi-band variability and correlation studies.