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Long term optical variability monitoring of γ -ray emitting AGN 1ES 0647+250

Active Galactic Nuclei are among the most highly energetic objects in the universe. The BL Lac object 1ES 0647+250 is one of the few distant γ -ray emitting blazars detected at very high energies (100 GeV) during a non-flaring state. This object is among the favoured candidate extragalactic sources in the very high-energy regime due to the presence of high-energy electrons and adequate seed photons. The presence of high energy electrons is established from the location of the synchronous peak in the spectral energy distribution of the blazars. It was detected with the 30 inch telescope at VBO, Kavalur, India during a period from January 2020 to March 2020 using I, V and R filters. The presence of adequate seed photons is determined by the flux in optical wavebands. The redshift of 1ES 0647+250 has been tentatively reported as 0.45, thus the detection of very high-energy gamma-ray emission from this object could make significant contributions to the understanding of the extragalactic infrared background light. We evaluated the variability of the emission in the different energy bands with the fractional variability as well as its spectral evolution in γ rays.

Presentation Type

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