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Study of variability in radiation from the Blazar source 3C454.3

KAUSTAV DIPTA GOSWAMI, RUPJYOTI GOGOI, RUKAIYA KHATOON, Tezpur University — Blazars, a subclass of Active Galactic Nuclei (AGN), are the most promising sources of high energy emission in the known universe. Here, the emission originates from a relativistic jet aligned at or close to the line of sight of the observer. Extending from radio to gamma-ray energies, their broad band spectrum is predominantly non-thermal. Blazars show very high flux variability across the entire electromagnetic spectrum. In this work, we present a study of the long-term variability in radiation from the FSRQ 3C454.3 by constructing flux distributions using 10-year simultaneous optical and gamma ray observations from SPOL at Steward Observatory and Fermi-LAT, respectively. Also, we study flux distribution using X-ray data from AstroSat. We perform investigations of the temporal and spectral variability. As for the temporal analysis, we construct light-curves with the data from all the three bands. Further, we construct the Spectral Energy Distribution (SED) using X-ray data (LAXPC and SXT) and fit the SED with various models viz. power-law, log-parabola and broken power-law.

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