Contribution ID: **105** Type: **Poster**

Deciphering Blazar X-ray Variability: Insights from NICER Spectral Analysis

Thursday, 20 February 2025 19:00 (5 minutes)

Blazars, a subclass of active galactic nuclei, exhibit highly variable non-thermal emission originating from relativistic jets aligned with the line of sight to Earth. This variability offers key insights into the physical processes driving these systems. In this study, we analyzed the X-ray spectra of a sample of X-ray-bright blazars observed with NICER, fitting three spectral models: a single power law, a broken power law, and a log-parabola. Our results indicate that a single power law sufficiently describes the majority of the X-ray spectra. However, in certain cases, a broken power law or log-parabola model better represents the data, suggesting spectral variability linked to complex jet dynamics. These findings align with the standard blazar model, which attributes such variability to shocks propagating through relativistic jets, providing new insights into the emission mechanisms at play in these extreme environments.

Primary author: Ms KIZHAKKEKALAM, SANGEETHA (DOCTORAL STUDENT ,UNIVERSITY OF ZIELONA GORA)

Co-author: Prof. BHATTA, GOPAL (UNIVERSITY OF ZIELONA GORA)

Presenter: Ms KIZHAKKEKALAM, SANGEETHA (DOCTORAL STUDENT ,UNIVERSITY OF ZIELONA GORA)

Session Classification: Reception and poster session

Track Classification: Gamma-ray Astronomy