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BL Lacertae: Unravelling the change in spectral upturn with flux variation

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BL Lacertae is an intermediate BL Lac object. It entered a flaring state in gamma energy range in August 2020. It was also found entering a flaring X-ray state. In this work, we examine the change in spectra of BL Lacertae with the variation in flux in X-ray energy range of 0.2-10.0 keV. For this, we took observations from the EPIC-PN instrument onboard XMM-Newton satellite. We did the spectral modeling for the different flaring and quiescent states of BL Lacertae and examined the variation of upturn from synchrotron to inverse compton emission with the variation in flux. A steep power law model represents the soft X-ray emission due to synchrotron process and another power law model was used to describe the hard energy emission explained by inverse compton emission. We notice the change in the energy of the upturn that was observed in low X-ray energies in small time ranges as the flux of the source changes.

Collaboration

No

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