



# X-RAY ASTRONOMY 2019

*Current Challenges and New Frontiers in the Next Decade*

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## Nature of the coronal emission in Active Galactic Nuclei

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The X-ray spectrum from the corona of an AGN is generally approximated as a power law up to certain energies after which the spectrum turns over called as cut-off energy. Thus, the two main observables in the X-ray spectrum of an AGN are the power law photon index and the energy at which the cut-off occurs. This high energy cut-off is a manifestation of the temperature of the electrons in the corona which is inferred to be around 2-3 times the electron temperature. Therefore, constraining the temperature of the corona in AGN is very important to understand the physical processes happening close to their central regions. Observations from INTEGRAL and Swift/BAT have provided high energy cut-off measurements (found to be at around tens of keV) in a few AGN, however, with large uncertainties. Observations with NuSTAR is better poised to provide measurements of the coronal temperature of AGN owing to its focusing capability and better sensitivity compared to INTEGRAL and Swift/BAT. To determine the physical parameters of the corona, it is very important to have broadband X-ray data. Towards this, we have selected a sample of Seyfert galaxies having NuSTAR data and have combined this with data from Suzaku and XMM. Simultaneous model fits were performed to derive the coronal properties of our sample. Results of this systematic study will be presented at the meeting.

### Topic

Active Galactic Nuclei: accretion physics and evolution across cosmic time

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