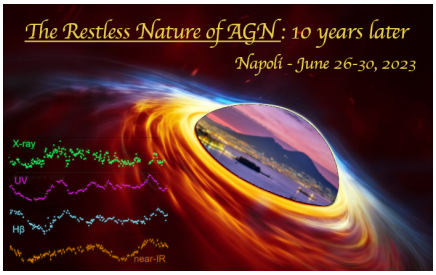

Contribution ID : **168** Type : **Contributed talk**

Identifying low accretion rate AGN and studying their X-ray variability with the EPIC XMM Outburst Detector Ultimate System (EXODUS)

lunedì 26 giugno 2023 18:00 (15)

Temporal variability of flux across the electromagnetic spectrum is a commonly observed phenomenon in Active Galactic Nuclei (AGN), however the phenomenon is not well studied in low accretion rate AGN, primarily due to difficulties identifying them in X-ray catalogues due to their lower luminosity. In this work, we use our algorithm EXODUS, which searches for variability in the whole of *XMM-Newton*'s EPIC field of view and is agnostic of source detection and the number of counts. It accomplishes this by binning the observations into short time windows and comparing the pixel counts per window to the median pixel counts to detect variable sources within the observation, making EXODUS ideal for studying faint rapid X-ray transients. We apply EXODUS to all of the observations that comprise the 4XMM-DR11 catalogue to create a reliable subset of low Eddington ratio AGN. Understanding these AGN helps us to develop a more complete framework constraining the presence/absence of the corona from the hardness/softness of spectra during the low accretion phase. Additionally, we measure black hole masses, variability timescales, and the prominence of their coronal/disc emission by studying the effect of the different modes of AGN accretion on line-emitting gas. We compare the results of this study with those of our previous X-ray studies on moderate accretion rate AGN selected from the BAT AGN Spectroscopic Survey sample.

Primary author(s) : Dr. GUPTA, Maitrayee (Institute for Research in Astrophysics and Planetology (IRAP), CNRS, Toulouse, France); Dr. PANDA, Swayamtrupta (Laboratório Nacional de Astrofísica, Itajubá, Brazil); Prof. WEBB, Natalie (Institute for Research in Astrophysics and Planetology (IRAP), CNRS; Universite de Toulouse, CNES, Toulouse, France)

Presenter(s) : Dr. GUPTA, Maitrayee (Institute for Research in Astrophysics and Planetology (IRAP), CNRS, Toulouse, France)

Session Classification : X-ray continuum variability