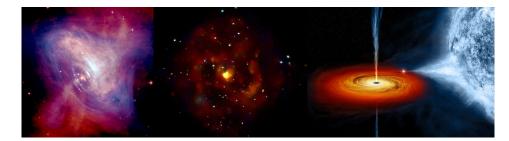
National conference on REcent Trends in the study of Compact Objects (RETCO-V): Theory and Observation



Contribution ID: 53

Type: not specified

## AstroSat-NuSTAR monitoring of GX 339-4 and H 1743-322 : Broadband spectro-temporal analyses

Monday, April 3, 2023 4:50 PM (15 minutes)

We present the results from X-ray broadband spectro-temporal analyses of recurrent outbursting sources GX 339–4 and H 1743–322 using AstroSat and NuSTAR archival observations carried out during 2016–2022. GX 339–4 was found to be making transition from quiescence to outburst, and the wide-band spectral analyses results during outbursts shows that GX 339–4 was in hard ( $kT_{\rm bb} = 0.29 - 0.51$  keV,  $\Gamma = 1.46 - 2.06$  and  $L_{\rm bol} = 0.27 - 8.22\%$  of Eddington luminosity  $L_{\rm Edd}$ ), intermediate ( $kT_{\rm in} = 0.75 - 1.08$  keV,  $\Gamma = 1.71 - 2.49$ ,  $L_{\rm bol} = 6.74 - 9.11\% L_{\rm Edd}$ ) and soft states ( $kT_{\rm in} = 0.51 - 0.93$  keV,  $\Gamma = 1.67 - 3.74$ ,  $L_{\rm bol} = 9.06 - 15.27\% L_{\rm Edd}$ ). Instead H 1743–322 found to make transition from quiscence to only hard state ( $\Gamma = 1.57 - 1.73$ ,  $L_{\rm bol} = 3.07 - 6.61\% L_{\rm Edd}$ ). Timing variability studies revealed the presence of Quasi-periodic Oscillations (QPOs) in GX 339–4 with frequencies varying between 0.10 - 5.37 Hz along with harmonics. We detect type C QPOs in H 1743–322 with frequencies in the range 0.22 - 1.01 Hz along with distinct harmonics are present only in 3 - 20 keV. Whereas in H 1743–322, the fundamental QPO is present only in 3 - 40 keV energy band and the harmonic is not significant above  $\sim 20$  keV. We discuss these observational findings in the context of accretion dynamics around black hole binary.

## **Presentation Type**

Oral

Primary author: U, ANEESHA (IIT GUWAHATI)

**Co-authors:** Dr NANDI, Anuj (U.R.Rao Satellite centre, Banglore); Dr DAS, Santabrata (IIT GUWAHATI); Dr KATOCH, Tilak B (TIFR MUMBAI)

Presenter: U, ANEESHA (IIT GUWAHATI)

Session Classification: Black Hole: Observations

Track Classification: Black Hole: Observations