Contribution ID: **22** Type: **Talk**

The accretion ejection interplay in GX 340+0: Insights from joint X-ray and radio campaign

Accreting low-mass X-ray binaries (LMXBs) provide a unique testbed to investigate the complex interplay between accretion flows and relativistic jets. In both neutron star and black hole systems LMXBs, X-ray and radio emissions are observed to be correlated, though neutron star systems exhibit significantly lower radio fluxes at comparable X-ray luminosities. Among neutron star LMXBs, Z-sources are particularly notable for their rapid X-ray variability, often accompanied by correlated changes in radio emission. To explore the accretion geometry and jet properties of the enigmatic Z-source GX 340+0, we conducted a multi-wavelength observational campaign using various X-ray and radio observatories. In this talk, I will present how polarimetric measurements with IXPE, along with spectro-timing studies using AstroSat and NICER, provide critical insights into the structure of the Comptonizing medium and accretion flow components. Additionally, simultaneous radio observations allow us to track the evolution of the radio spectrum, identify spectral breaks, and examine how the jet properties evolve along the Z-track. These results offer new constraints on the coupling between accretion processes and jet formation in neutron star X-ray binaries.

Contribution

Oral talk

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Session Classification: Accretion-ejection (observation, theory, simulations)

Track Classification: Talk