Seminar, Department of Physical Sciences, Bose Institute, Kolkata

Magnetic Field Structure in Accreting X-ray binary Neutron Star systems

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Abstract: A X-ray binary(XRB) is a binary system consisting of an accreting neutron star(NS), white dwarf or black hole and a main sequence companion star. High-mass X-ray binaries (HMXB) are a subclass of X-ray binaries with the companion mass greater than ten solar mass. A compact star produces X-ray radiation during the accretion of material from the stellar wind or Roche lobe overflow. High-mass X-ray binaries are ideal places to stellar winds, material exchange between binary stars, and the evolution of magnetic field strength of the NS. In this talk I will present the study of cyclotron lines present in the transient HMXB 4U 0115+63 during its recent Type-II outburst in 2023 and how the cyclotron lines vary with source luminosity and check them against the predictions from collisionless shock model. I would also give a brief introduction on the recently launched Indian X-ray polarization instrument POLIX onboard XPoSat.

Based on: https://arxiv.org/abs/2407.13869

Date/time: August 08, 2024 (Thursday) at 12:00 noon

Venue: Physics Seminar Room (204, second floor, UAC, BI)