The 32nd Texas Symposium on Relativistic Astrophysics



Contribution ID: 296

Type: Contributed talk in mini symposium

High-soft to low-hard state transition in black hole X-ray binaries

Friday, 15 December 2023 12:15 (12 minutes)

To understand the decaying phase of outbursts in BH-XRBs, we performed very long GRMHD simulations of a geometrically thin accretion disk around a Kerr BH with slowly rotating matter injected from outside. Due to the interaction between the thin disk and injected matter, the accretion flow near the BH goes through different phases. The sequence of phases is: soft state \rightarrow soft-intermediate state \rightarrow hard-intermediate state \rightarrow hard state \rightarrow quiescent state. The talk will discuss the process of transition in detail. We also observed low-frequency QPOs (\sim 10Hz) and high-frequency QPOs (\sim 200Hz) throughout the evolution.

Primary author: DIHINGIA, Indu Kalpa (TDLI-SJTU)

Presenter: DIHINGIA, Indu Kalpa (TDLI-SJTU) **Session Classification:** Accretion Processes