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# Cyclic X-ray Activity in Be/X-ray Binaries in the Context of Decretion Disk Evolution

岡崎敦男 (北海学園大), 森谷友由希 (広島大), 早崎公威 (KASI)

Be/X-ray binaries are high-mass X-ray sources comprised of a Be star with a circumstellar decretion disk and a neutron star in a wide and eccentric orbit. They show X-ray outbursts in the range of $L_{\rm X} \sim 10^{36-38}$erg s$^{-1}$, where $L_{\rm X}$ is the X-ray luminosity. Conventionally, these outbursts are classified into two types: normal X-ray outbursts, which have $L_{\rm X} \sim 10^{36-37}$erg s$^{-1}$ and occur repeatedly with the interval of the orbital period, and giant outbursts, which are significantly brighter ($L_{\rm X} > 10^{37}$erg s$^{-1}$) and less frequent than normal outbursts (Stella et al. 1986). While there are systems that exhibit a normal X-ray outburst at every periastron passage, in other systems normal outbursts are seen only for a while before and/or after a giant outburst, and during this X-ray active period the Balmer line profiles arizing from the Be decretion disk often have strong variability.

In this talk, we present a scenario that puts the latter type of X-ray activity in perspective of Be disk evolution. Particularly, we relate a series of normal and giant X-ray outbursts with the varying interaction between the neutron star and a precessing warped Be disk, which is triggered by the cessation of mass ejection from the central star. Our scenario naturally explains observational characteristics of the cyclic optical and X-ray activity in Be/X-ray binaries (Moritani et al. 2013, submitted to PASJ).