J105a Understanding Dipping LMXBs in the Same Scheme as Normal LMXBs

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Dipping low-mass X-ray binaries (LMXBs) are LMXBs which show periodic dips in their X-ray intensity. For more than twenty years they were explained as "ADC sources", with a special design of an accretion disk corona (ADC, White & Holt 1982). However, new studies revealed that the existence of ADC is no longer necessary (e.g., Díaz Trigo et al. 2006). Thus we are motivated to unify dipping LMXBs in the same scheme as normal LMXBs (e.g., Aquila X-1, Sakurai et al. 2013), only with the difference in their inclination angles. Moreover, we expect these two populations present different strength of Comptonization, which is caused by possible anisotropy of the Comptonizing coronae, that the coronal shape may be oblate towards the accretion disk.

In order to study the above issue we analyzed the *S*uzaku and *B*eppoSAX broadband spectra of ∼8 Galactic dipping LMXBs (XB 1916-053, XB 1254-690, XB 1323-619, EXO 0748-676, etc.). We firstly found that dipping LMXBs also present high-soft and low-hard spectral states with similar spectral parameters as widely known for normal LMXBs (Mitsuda et al. 1984, 1989). Moreover, we found that dippers, regardless of the spectral states, are likely to exhibit systematically stronger Comptonization phenomena. These results indicate that dipping LMXBs are essentially in the same scheme to normal LMXBs. The stronger Comptonization can be explained possibly by longer Comptonizing paths viewing from higher inclinations.