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Accretion in white dwarf binaries - short time variability and broadband noise characteristics: connecting CVs to neutron star and black hole binaries

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I review accretion in Cataclysmic Variable systems with emphasis on flicker noise and its variations that have been a diagnostic tool in understanding the structure in accretion disks. I study the nature of time variability of brightness of non-magnetic cataclysmic variables. Dwarf novae demonstrate band limited noise in the UV and X-ray energy bands, which can be adequately explained in the framework of the model of propagating fluctuations as in XRBs. The detected frequency breaks in the range (1-6) mHz indicates an optically thick disk truncation in the inner disk of some dwarf novae systems in quiescence. Analysis of other available data (SS Cyg, SU UMa, WZ Sge, Z Cha) indicate that during the outburst the inner disk radius moves towards the white dwarf and recedes as the outburst declines while changes in the X-ray energy spectrum is also observed. Cross-correlations between the simultaneous Optical, UV and X-ray light curves show time lags in the X-rays (90-180 sec) consistent with truncated inner optically thick disk. I compare magnetic and nonmagnetic CVs in terms of their broadband noise characteristics which in general show compliance with the model of propagating fluctuations. In addition, I discuss comparisons with X-ray binaries.

Summary

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