N37b A Steady State Model of X-ray Emitting Coronae Around Accreting White Dwarfs in Cataclysmic Variables

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We consider the X-ray emission of non-magnetic cataclysmic variable stars. It is well known that a nearly spherical hot corona is produced around the accreting white dwarf because of strong viscous heating and of rather inefficient cooling of matter at the boundary layer if the accretion rate is below some critical value. A steady state transonic model of an X-ray emitting corona is then constructed and the X-ray spectrum is calculated as a function of accretion rate $\dot{M}$. Eclipse of such corona is simulated. It is found that the thermal energy of the corona is transported downward by conduction to the denser area near the surface of the white dwarf where it is then emitted as soft X-ray and extreme far ultraviolet radiation. Up to $\sim 5\%$ of the accreted matter could leave the system as stellar wind. Most of the X-ray is radiated from regions near the white dwarf surface within this model. Eclipse simulations of this model agree with recent *ASCA* eclipse observation of HT Cas.