

NEW SIMULATIONS OF ACCRETING DA WHITE DWARFS

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What happens to planetary systems when the central stars reach the late stages of stellar evolution? Debris disks have been discovered around white dwarfs and spectroscopic observations prove that ex-planetary matter is presently falling on the atmospheres of many of these dying stars. Detailed studies of this remaining matter may lead to constraints on the original planetary system, provided that the connection between the presently observed abundances and that of the original falling matter is correctly computed. Many studies have been performed, considering only gravitational settling below the convective zone. Most of them neglect thermohaline convection (also called fingering convection), a hydrodynamical effect that may be important, specially for DA white dwarfs. Considering this effect together with gravitational settling implies accretion rates substantially larger than obtained when ignoring it. We have performed numerical simulations taking these processes properly into account for a range of effective temperatures, hydrogen mass fractions and accretion rates. We discuss the rates we have obtained, and compare them with the one recently derived from X-ray observations of the DAZ G29-38.