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# Mass limits of the extremely fast-spinning white dwarfs

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We explore the stability of this rapidly rotating WD using a modern equation of state (EoS) that accounts for electron–ion, electron–electron, and ion–ion interactions. For this EoS, we determine the mass density thresholds for the onset of pycnonuclear fusion reactions and study the impact of microscopic stability and rapid rotation on the structure and stability of WDs, considering them with helium, carbon, oxygen, and neon. From this analysis, we obtain a minimum mass and maximum mass for stable WDs, like is the case of the CTCV J2056−3014 with range of the mass of 0.56 M_{\odot} - 1.38 M_{\odot}. If the mass of CTCV J2056−3014 is close to the lower mass limit, its equatorial radius would be on the order of 10^{4} km due to rapid rotation. Such a radius is significantly larger than that of a nonrotating WD of average mass (0.6 M_{\odot}), which is on the order of 7 × 10^{3} km.

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