



The Beginnings and Ends of Double White Dwarfs

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Towards a complete picture of white dwarf merger outcomes

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The final outcome of white dwarf mergers across the entire merger parameter space is still relatively uncertain. This is mainly because, as the evolutionary phases involved span several orders of magnitude in timescales, one needs different numerical approaches/codes such as smoothed-particle hydrodynamics (SPH), magneto-hydrodynamics (MHD), and detailed stellar evolution for the dynamical merger, the viscous phase evolution and the long-term (thermal) evolution, respectively. I will describe results from the first step in our project to create a complete picture of the white dwarf merger products, namely analysis of our initial SPH grid of models. Our work includes studying the impact of improved initial conditions and nuclear burning during this dynamical phase. I will focus on the range of sub-Chandrasekhar white dwarf mergers which has been widely considered as providing promising progenitors for a significant subset of thermonuclear supernovae.

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