## N17a Rate density of tidal disruption events of white dwarfs in the local universe

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In a tidal disruption event (TDE) of a white dwarf (WD), a WD is torn apart by tidal force of a black hole (BH). WD TDEs can be a promising target of multi-messenger astronomy. They can be gamma/X-ray transients driven by debris accretion, and ultraviolet/optical transients driven by thermonuclear explosion of WDs. They can emit gravitational waves at a frequency of deci-Hertz. Finally, they may be sources of neutrino and cosmic ray. Moreover, WDs are tidally disrupted only by intermediate mass BHs (IMBHs) with $10^2 - 10^4$ $M_\odot$. Thus, WD TDEs can be probes for IMBHs.

No conclusive WD TDE has been reported. It will be helpful to show not only the rate density of WD TDEs in the local universe, but also the distributions of IMBH and WD masses and WD compositions. For this purpose, we utilized MOCCA-Survey Database I, which contains more than 2000 star cluster simulations. Star clusters are a candidate harboring IMBHs. Since many WD TDEs happen in the database, we can derive the rate density of WD TDEs and its derivatives, such the rate density differentiated by WD mass.

We found that WD TDEs in each star cluster occur 1000 times efficiency than predicted previously. Eventually, we got the WD TDE rate density in the local universe as $\lesssim 5.0 \times 10^2$ yr$^{-1}$ Gpc$^{-3}$. Dynamical effects increase the fraction of $> 1 M_\odot$ WDs to 20 % despite of small population of such massive WDs. In this talk, we will also discuss about observability of WD TDEs.