Dynamical Friction of Self-interacting FDM?
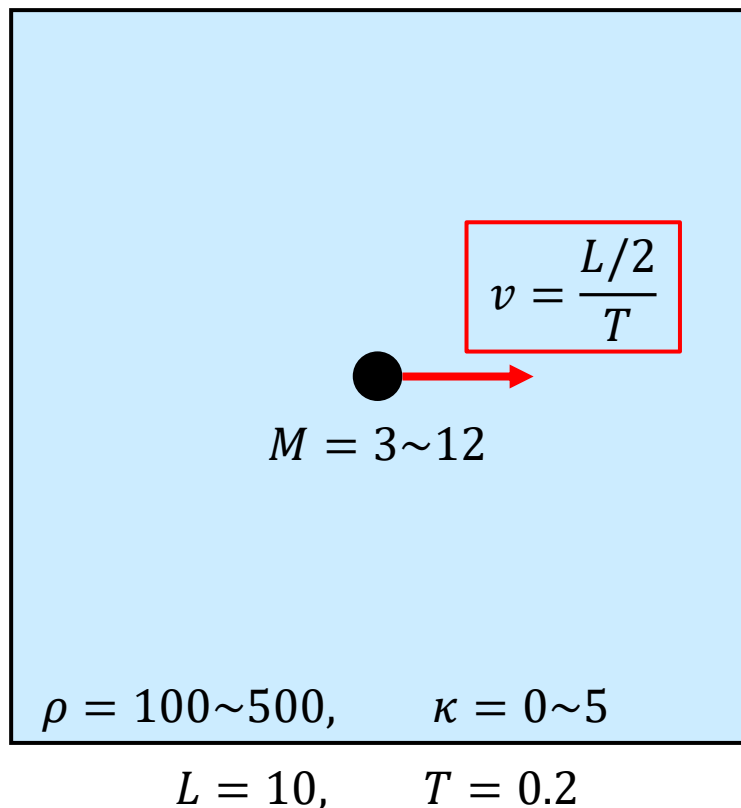
$$-\frac{1}{2}\nabla^2\psi + \Phi_N\psi + \kappa|\psi|^2\psi = i\frac{\partial\psi}{\partial t}$$

$$v = \frac{L/2}{T}$$

$M = 3\sim12$

$\rho = 100\sim500, \quad \kappa = 0\sim5$

$L = 10, \quad T = 0.2$

- $\ell_c = 38.36\text{kpc}$
- $t_c = 75.08\text{Gyr}$
- $\mathcal{M}_c = 2.23 \times 10^6 M_\odot$
- $\rho_c = 3.94 \times 10^{-8} M_\odot/\text{pc}^3$