Data Processing for ICR Abastract

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Chain Number Density, ν

Reported data in Suzuki et al. (2012)

$$\nu \approx 3.7 \times 10^{21}/m^3 \quad \text{number density for active chains} \tag{1}$$

$$\nu_0 = 1.8 \times 10^{23}/m^3 \quad \text{number density for all chains} \tag{2}$$

Note that $R_0 \in [1, 30]nm$, which implies $\nu_0 R_0^3 \in [1.8 \times 10^{-4}, 4.86]$.

The given condition:

- Number of chains per particles $=$ 25
- Number of particles $=$ 400, 600, 800, 1000, 1200, 1400
- Volume of box $= 10^3 R_0^3$

Measured number density: $\nu_x R_0^3 = \{10,\ 15,\ 20,\ 25,\ 30,\ 35\}$

Chain Number Density, ν (cont.)

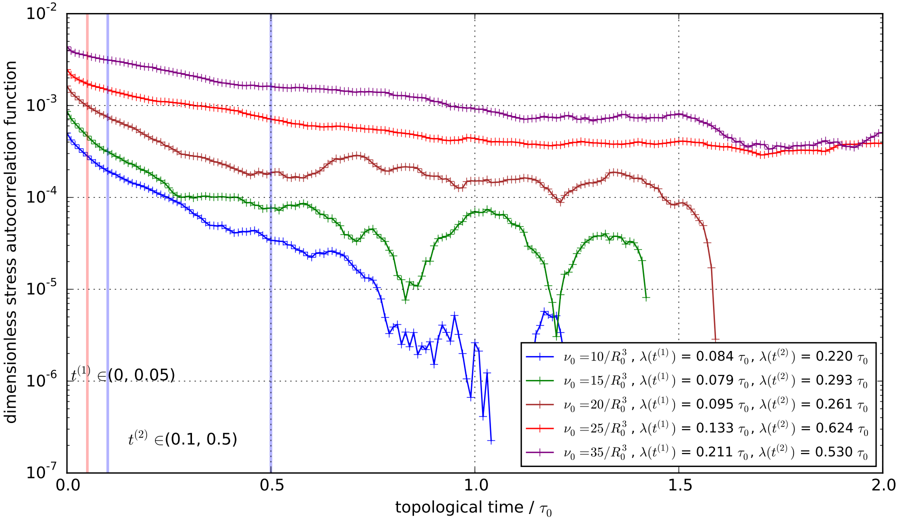
Expectated Micelle Dimension

$$\nu_x R_0^3 = F \Rightarrow R_0/nm = \left(\frac{F}{\tilde{\nu}_0}\right)^{1/3} = \left(\frac{F}{1.8} \times 10^4\right)^{1/3} \tag{3}$$

Underline this aspect, the test condition $\nu_x R_0^3 = \{10,\ 15,\ 20,\ 25,\ 30,\ 35\}$ means the expected dimensions are 38.2, 43.7, 48.1, 51.8, 55.0, and 57.9 in nm.

If we reduce the number of chains per micelle from 25 to 10, we have number new number density cases with the existing number of particles: $\nu_n R_0^3 = \{4,\ 6,\ 8,\ 10,\ 12,\ 14\}$, which implies the expected dimension for micelles as 28, 32, 35, 38, 40, and 42 in nm.

Stress Autocorrelation Function (semilog)



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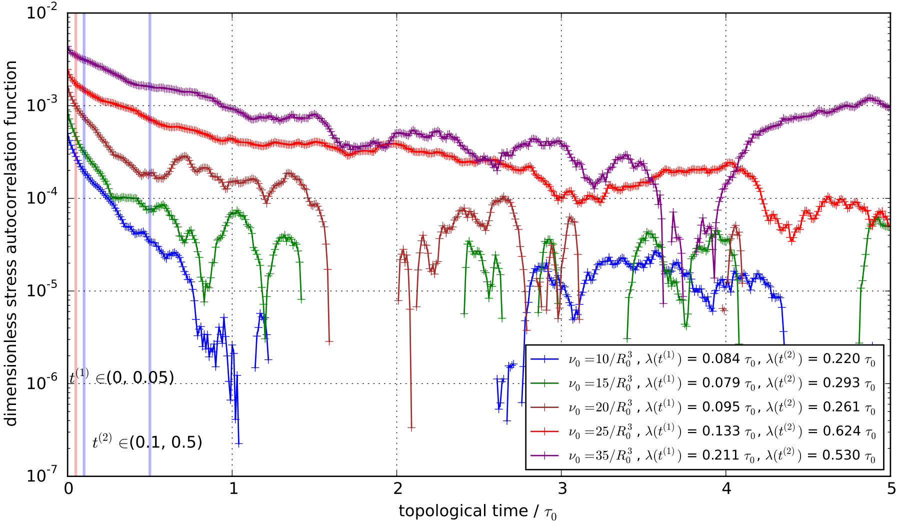
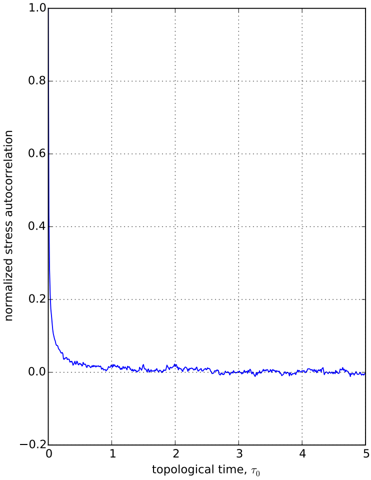
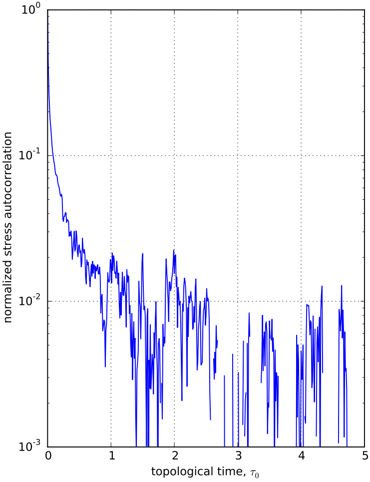


Temporal Results for RT=10k, NP=400





equation

$$\delta t$$

$$\beta$$

$$\beta_0$$

$$R_0$$

$$R_0^3$$

$$\frac{\partial \mathbf{r}_k}{\partial t} = \frac{1}{\zeta}\left(\sum_{i\in\mathscr{C}_k}\mathbf{F}^{(el)}(\mathbf{r}_i,\mathbf{r}_k) + \sum_{i=1}^{N_p}\mathbf{F}^{(rep)}(\mathbf{r}_i,\mathbf{r}_k) + \mathbf{F}^{(B)}(\mathbf{r}_k)\right), \tag{4}$$