Simulation in Equilibrium

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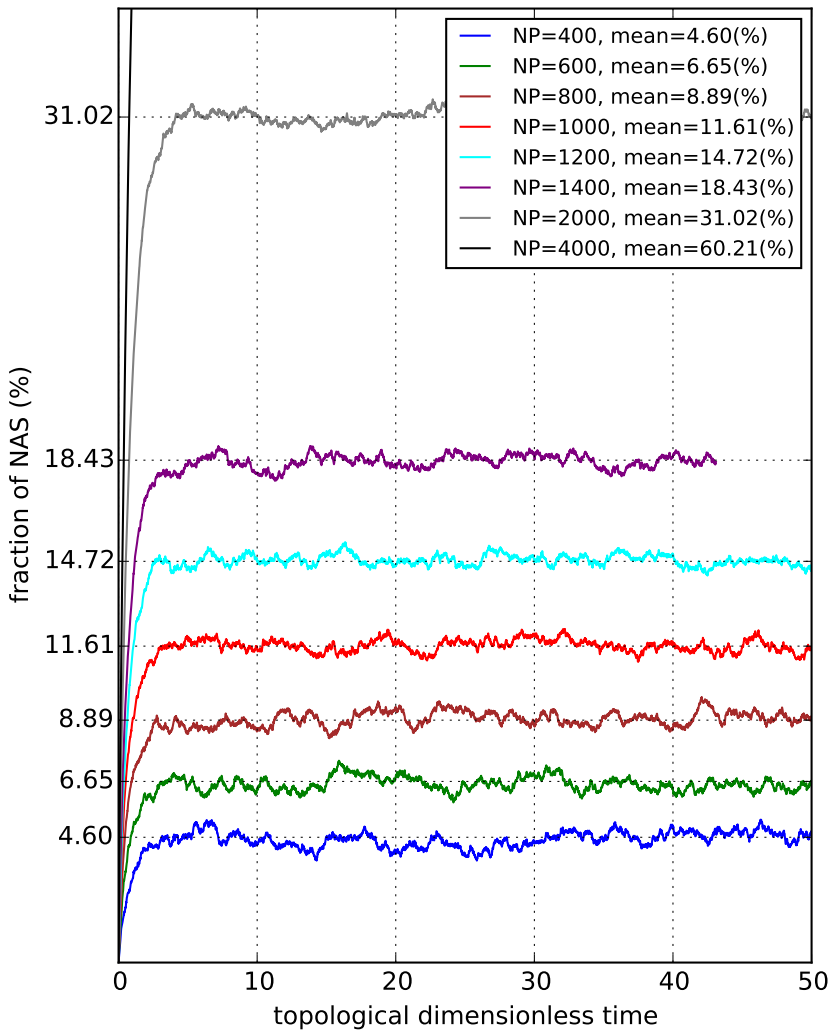
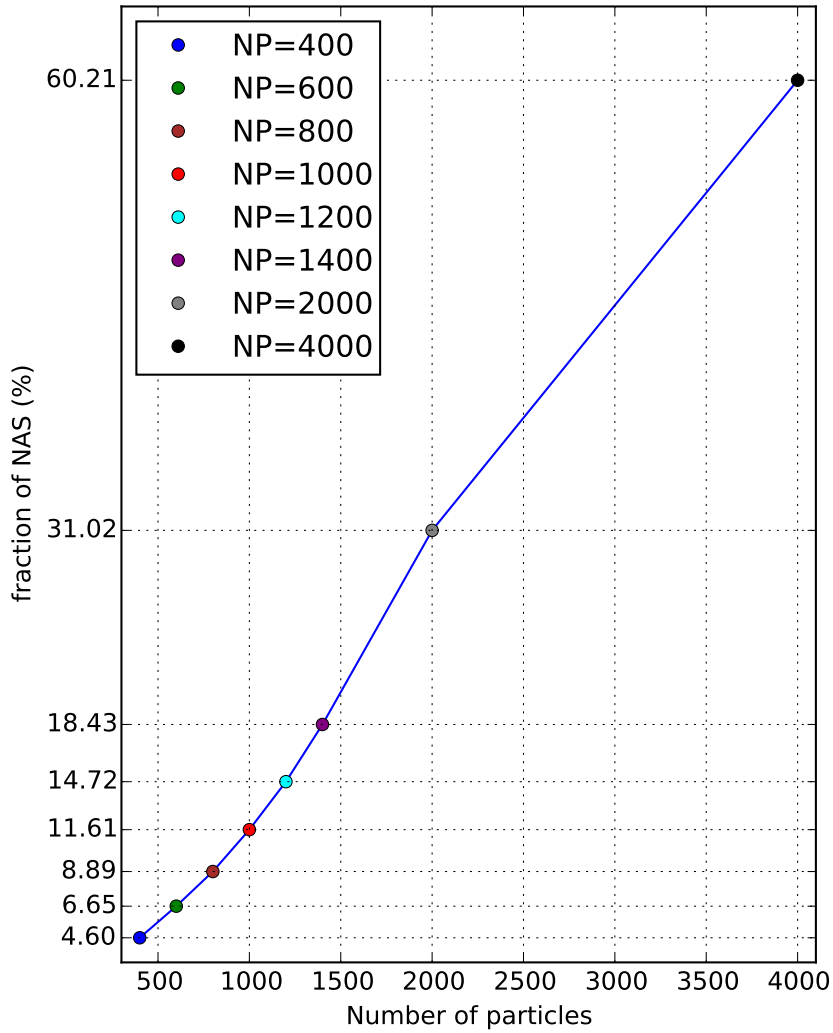
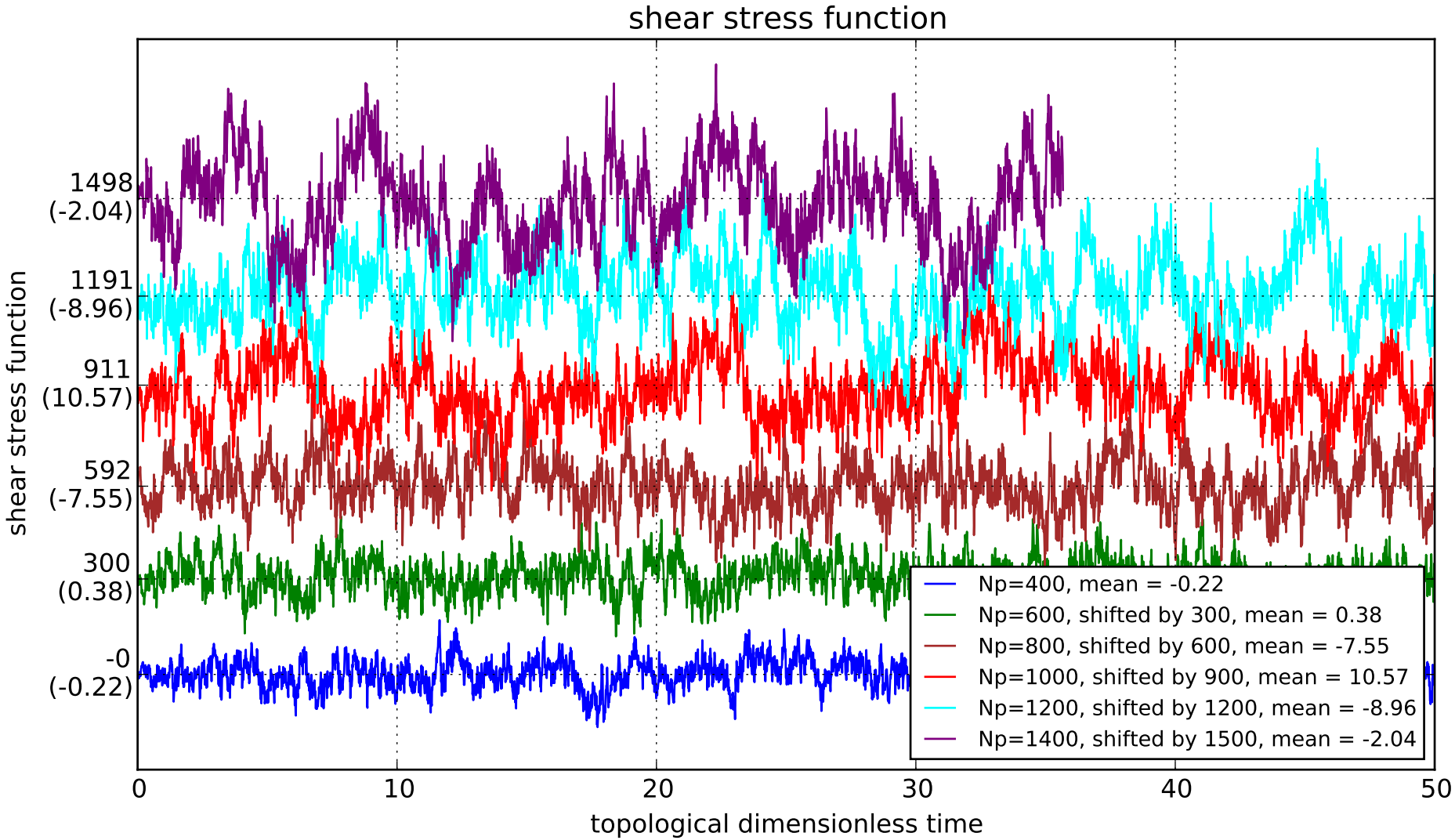
fNAS check

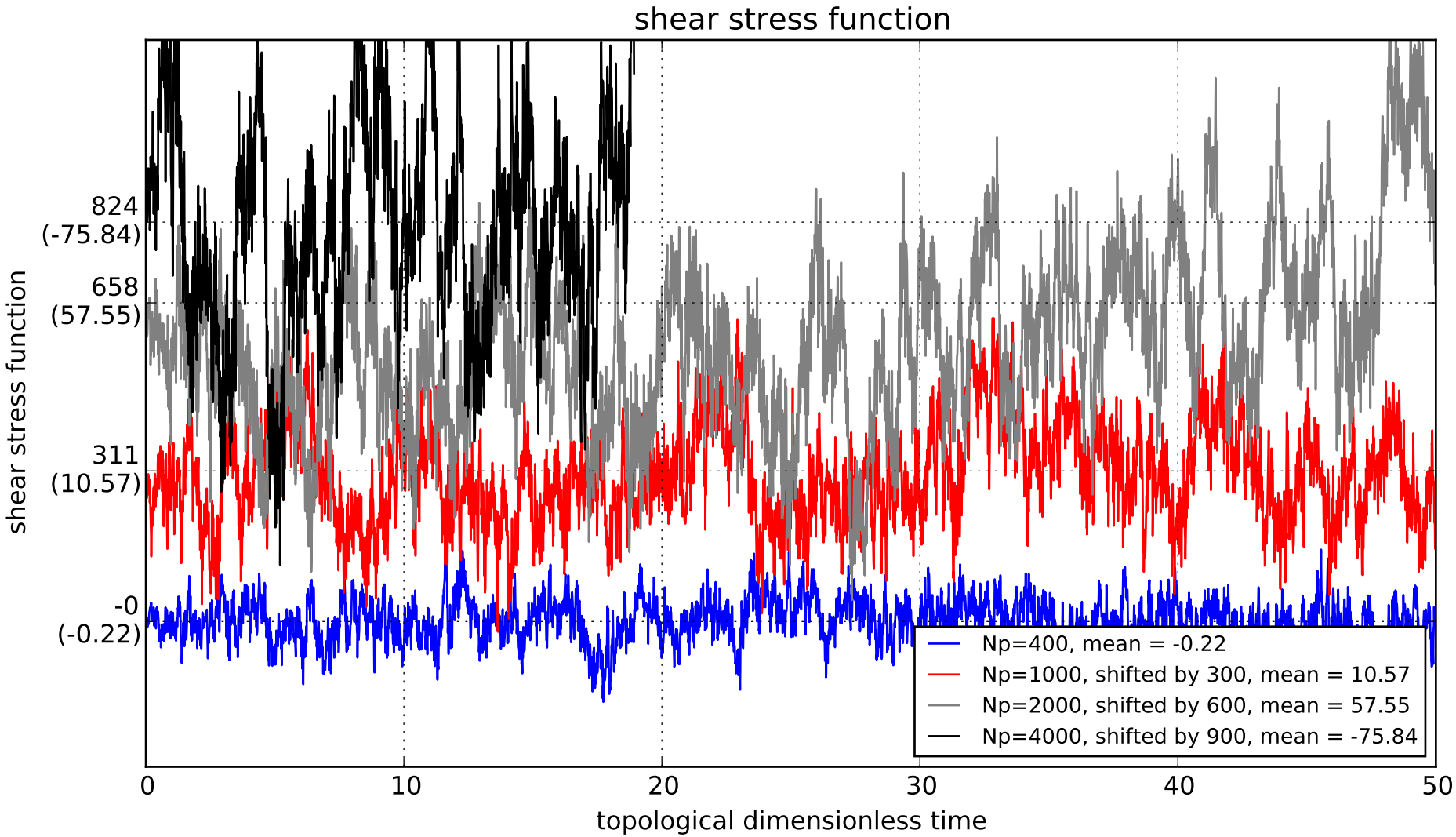

NP=400, mean=4.60(%)
NP=600, mean=6.65(%)
NP=800, mean=8.89(%)
NP=1000, mean=11.61(%)
NP=1200, mean=14.72(%)
NP=1400, mean=18.43(%)
NP=2000, mean=31.02(%)
NP=4000, mean=60.21(%)
fraction of NAS (%)
31.02
18.43
14.72
11.61
8.89
6.65
4.60
0
10
20
30
40
50
topological dimensionless time


NP=400
NP=600
NP=800
NP=1000
NP=1200
NP=1400
NP=2000
NP=4000
fraction of NAS (%)
60.21
31.02
18.43
14.72
11.61
8.89
6.65
4.60
500
1000
1500
2000
2500
3000
3500
4000
Number of particles

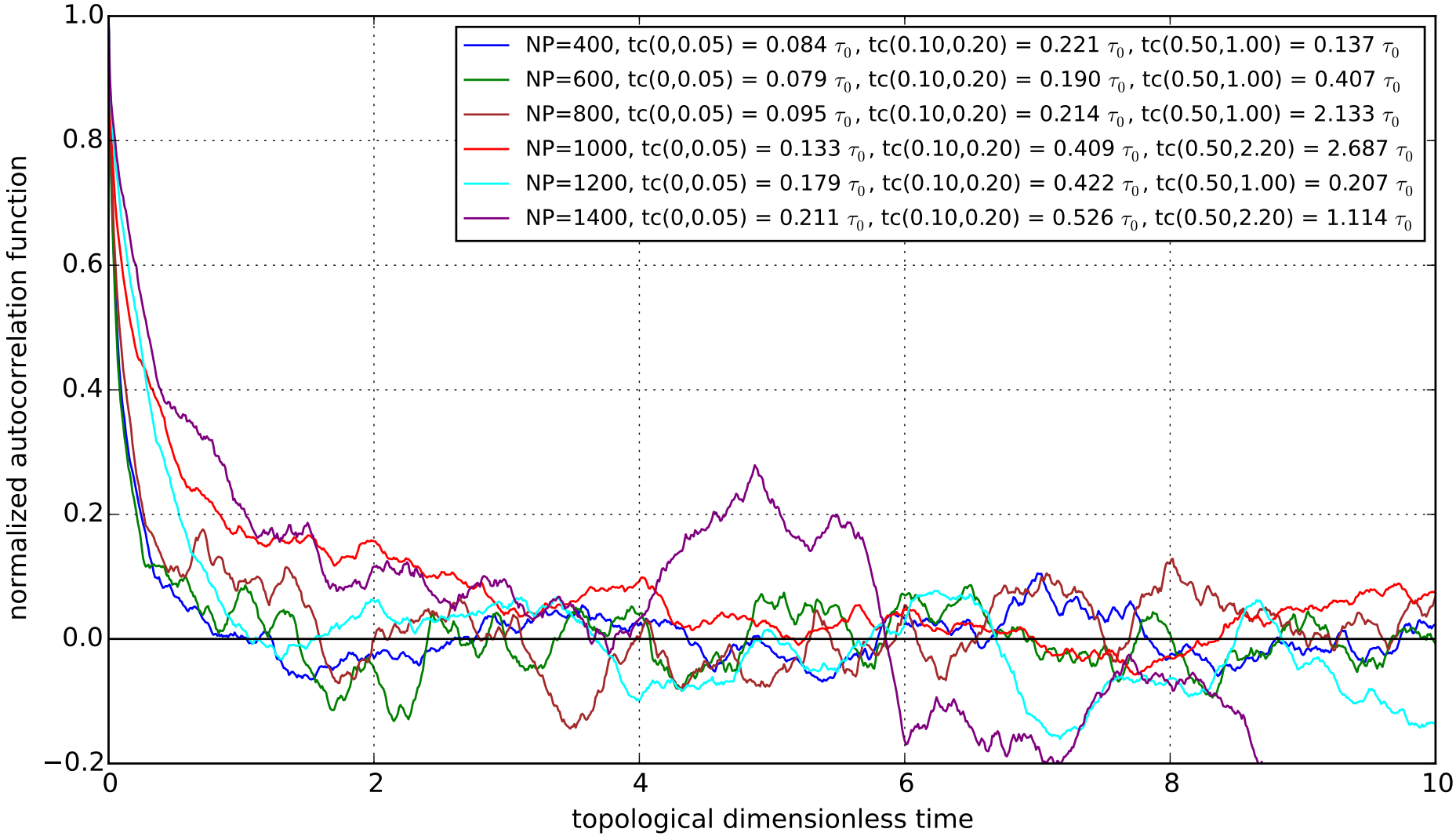
Shear Stress



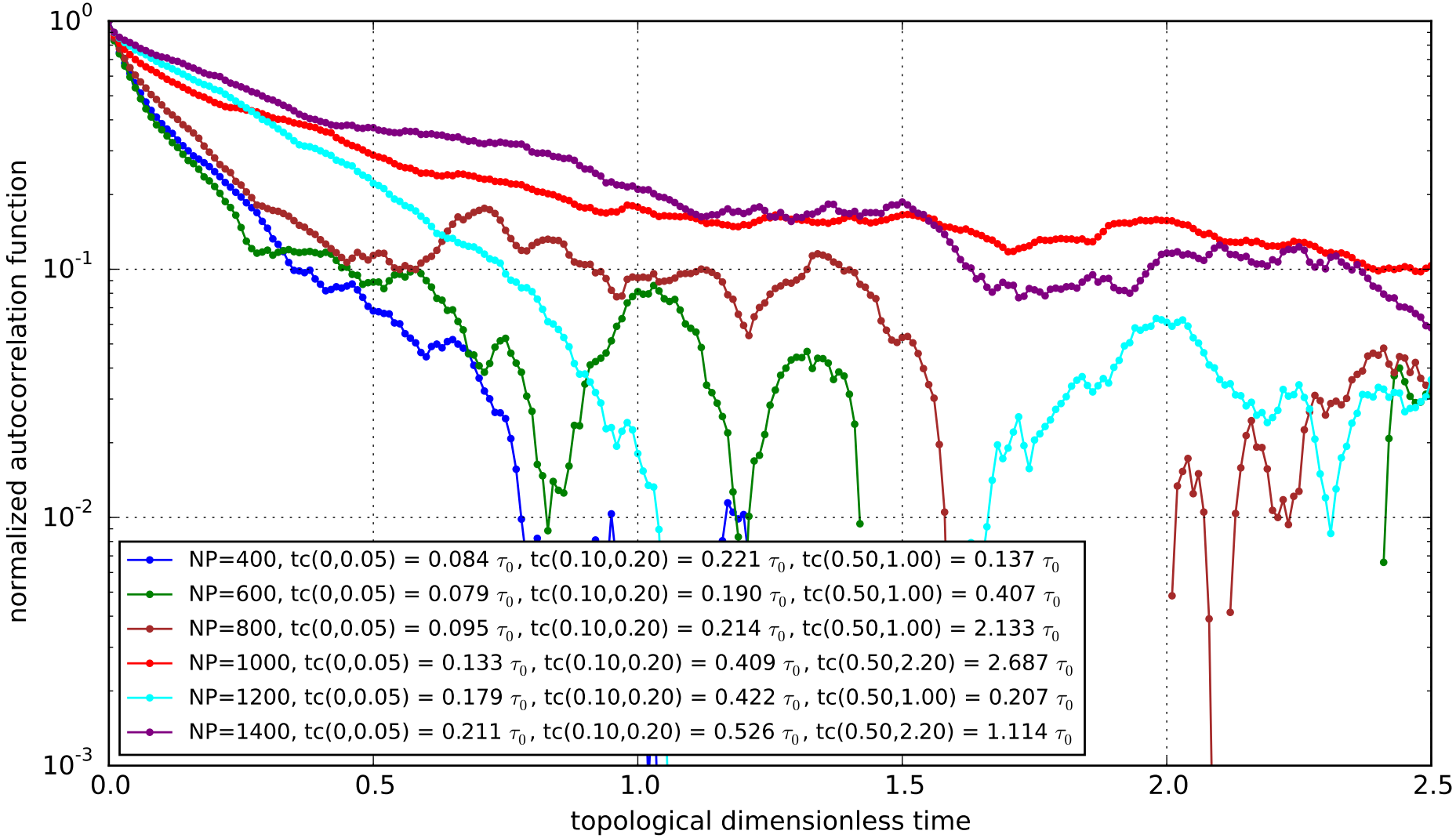
Shear Stress, concentrated regime



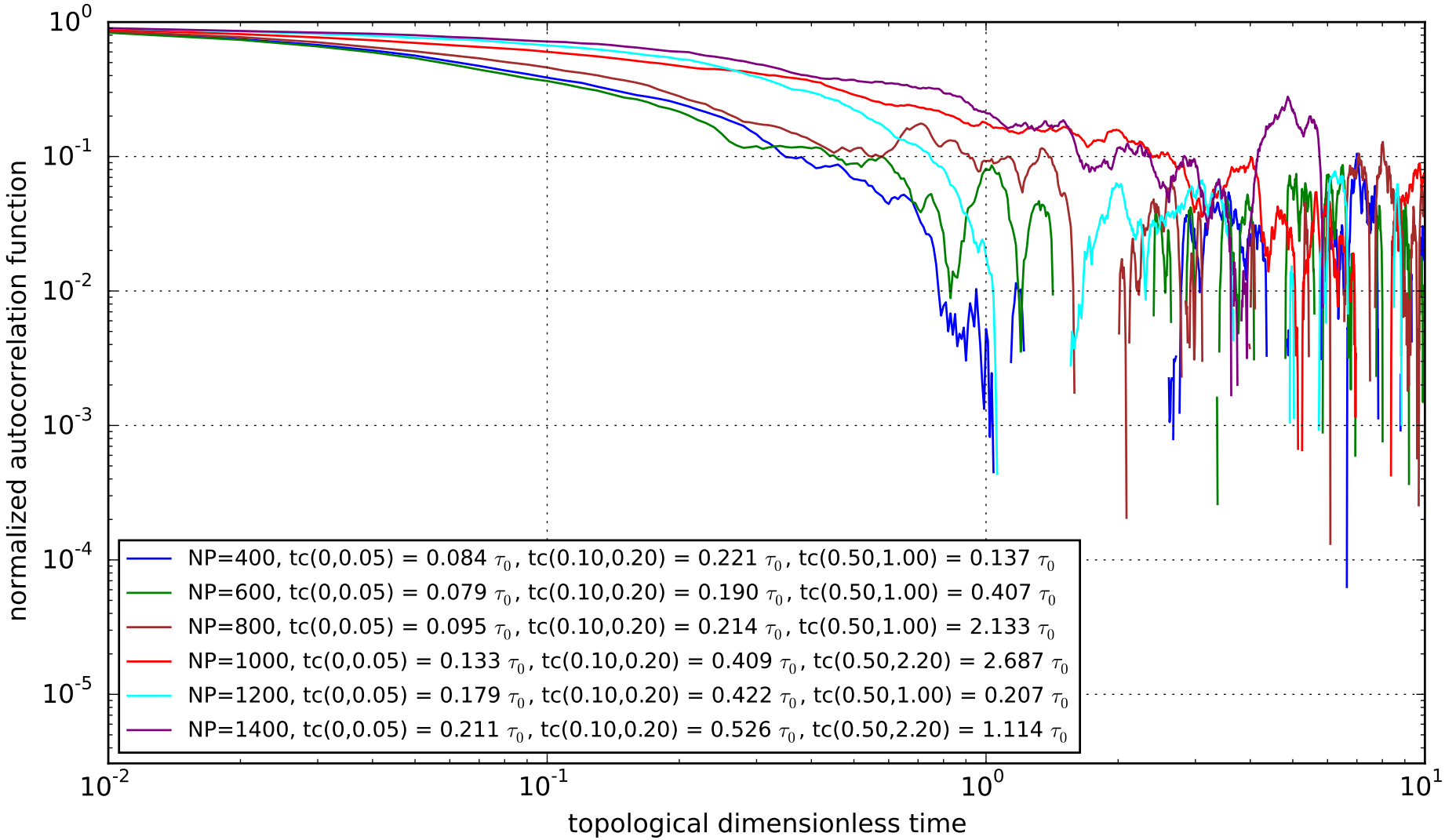
ACF for Shear Stress, biased statistics



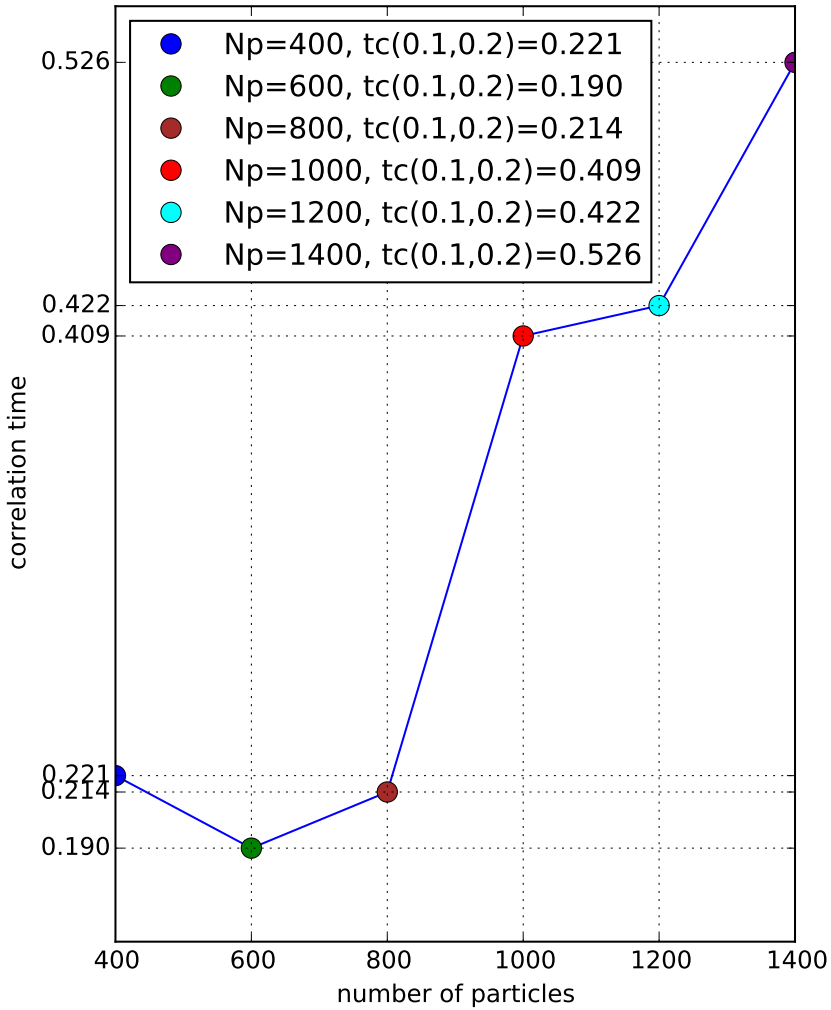
ACF for Shear Stress, biased statistics

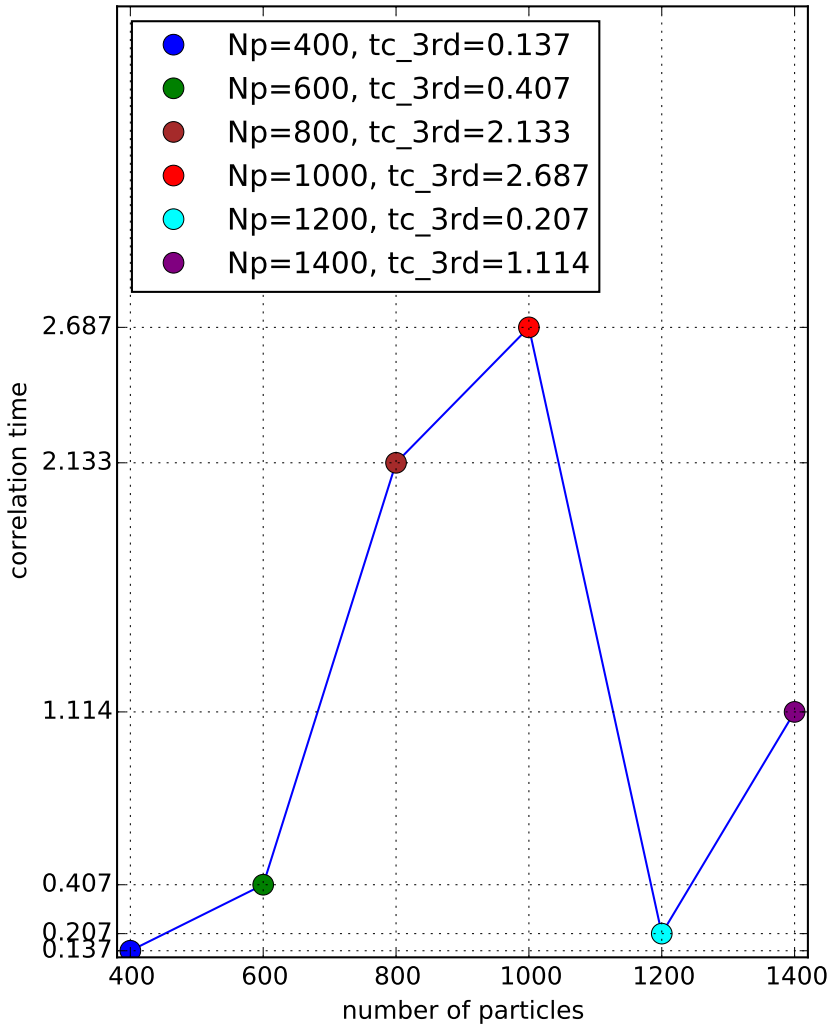


ACF for Shear Stress, biased statistics



Correlation time





Test Condition

Current definition for time scales

$$\tau_0 = \beta_0^{-1} \quad \text{dissociation time} \tag{1}$$

$$\tau_B = \frac{R_0^2 \zeta}{k_B T} \frac{1}{C}, \quad \text{Brownian time.} \tag{2}$$

As a default, the rational time scale, $R_t = \tau_0/\tau_B$, is set by 100.

- time step for Brownian motion: $10^{-4}\tau_0$ $(=10^{-2}\tau_B)$
- time step for topology: $10^{-3}\tau_0$ $(=10^{-1}\tau_B)$
- data output frequency: $10^{-2}\tau_0$ $(=\tau_B)$