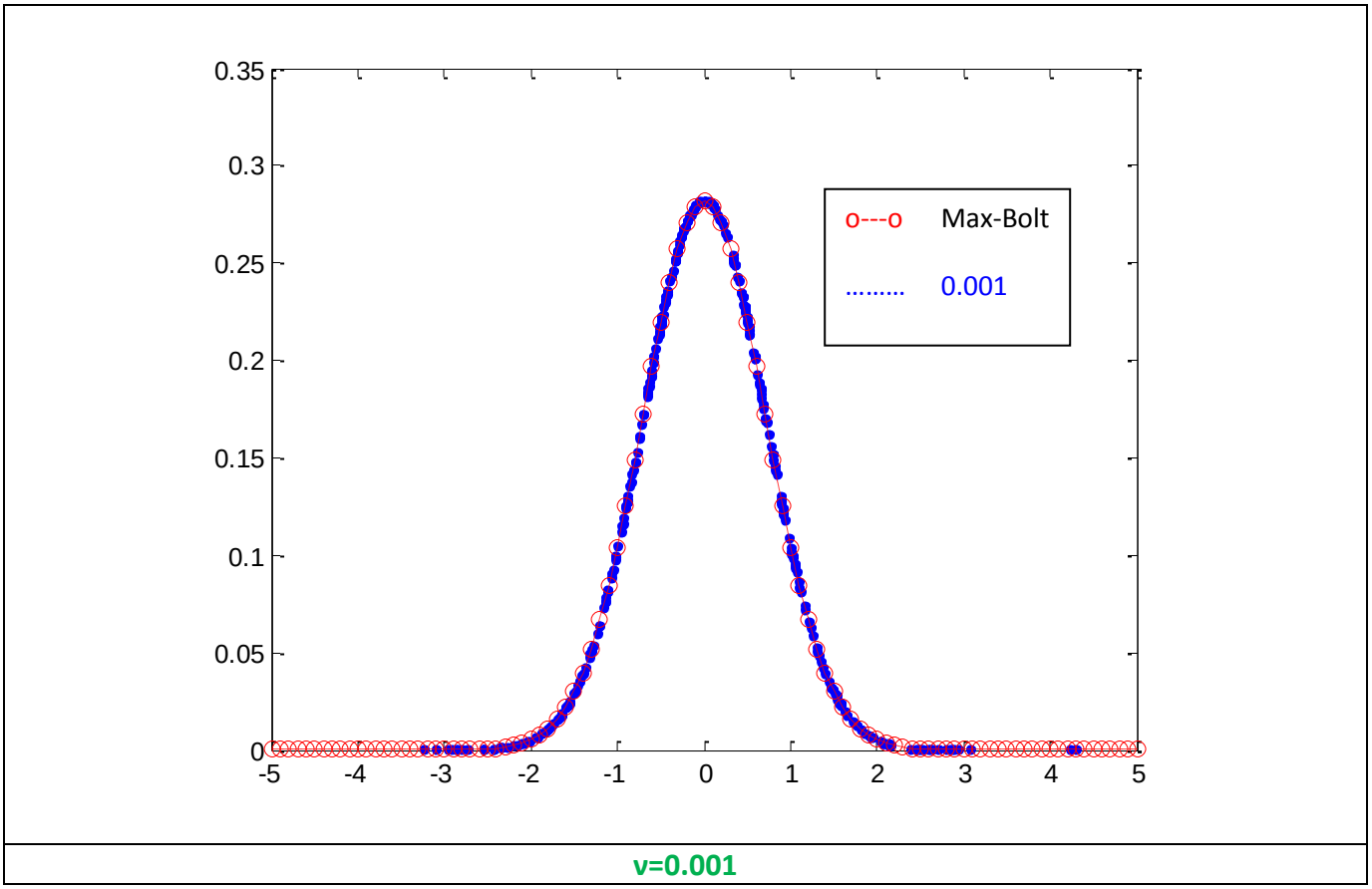
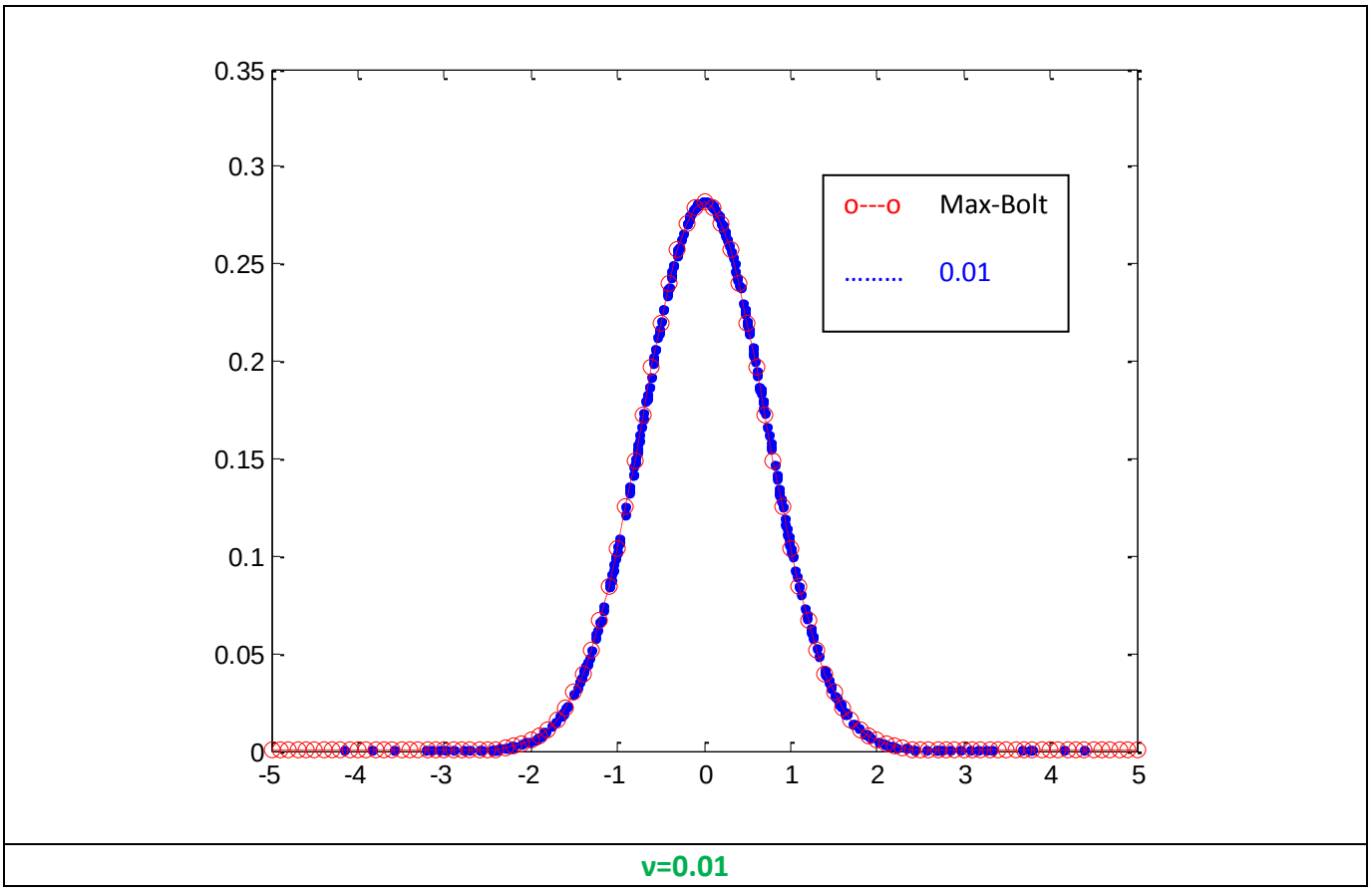
Generating Maxwell Boltzmann Distribution

System Parameters

- Collision Frequency (ν) = 0.001, 0.01
- Time Step, Δt = 0.005
- ν Δt = $5*10^{6}$, $5*10^{5}$
- Density (ρ) = 0.8442
- Number of Particles (N) = 108
- Number of Steps = 500000



v=0.001

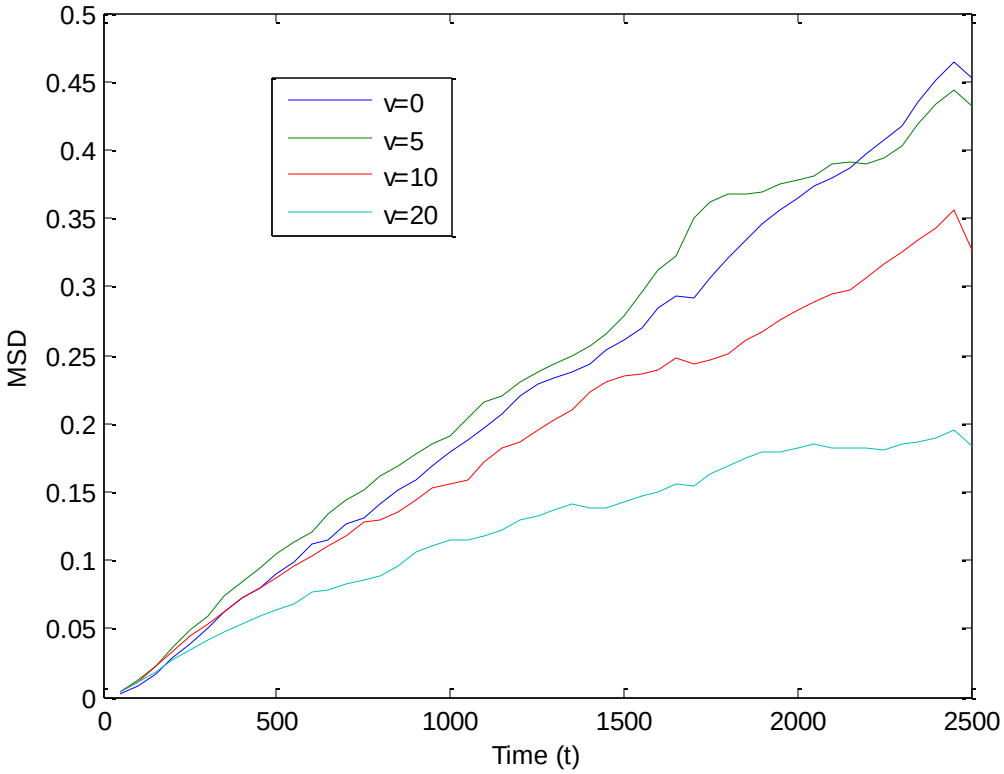


v=0.01

Dependence of Mean Square Displacement (MSD) on Collision Frequency

System Parameters

- Collision Frequency (ν) = 0, 5, 10, 20
- Time Step, Δt = 0.0005
- ν Δt = 0, 0.05, 0.01, 0.02
- Density (ρ) = 0.8442
- Number of Particles (N) = 108
- Number of Steps = 10000
    - MSD sampling start time = 5000
    - MSD sampling end time = 10000
    - MSD sampling time step = 50


0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
MSD
0
500
1000
1500
2000
2500
Time (t)
v=0
v=5
v=10
v=20