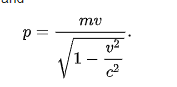
Part 1

Q1 Thermal velocity

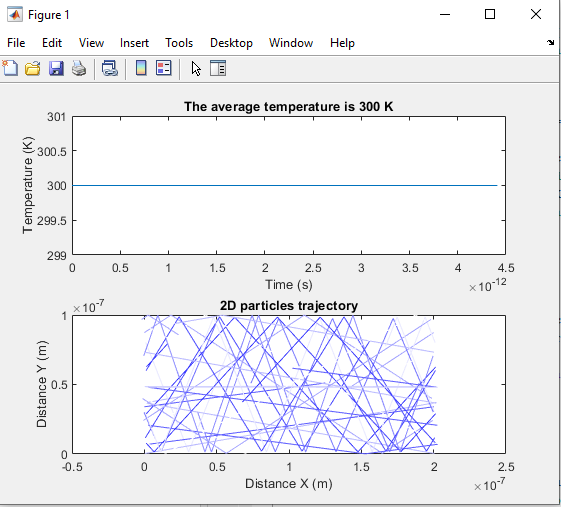
Note a 2D plane would have a degree of freedom of 2, the effective mass is 0.26 times of the rest mass.

(shouldn’t the mass be heavier?)



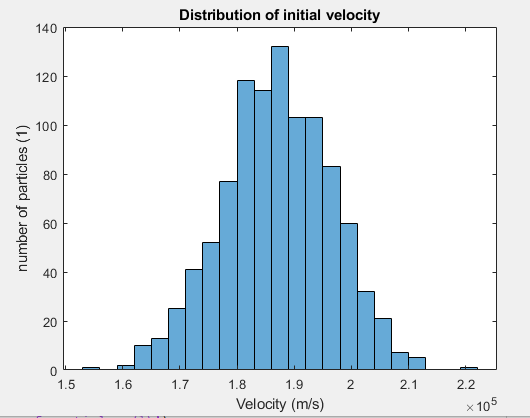
Q2 Mean free path

Q3 2D plot of particle trajectories and temperature plot

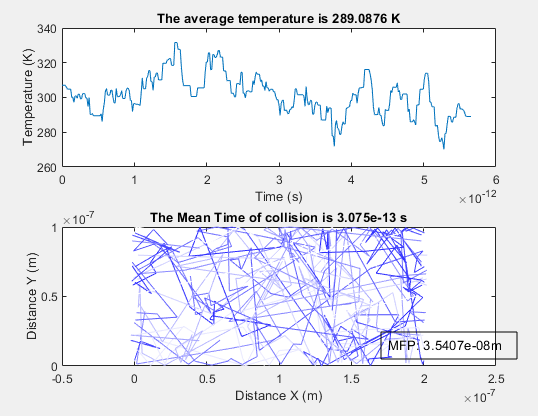


Part2

Q1 Histogram



[Q2,Q3] Plot of trajectory and temperature



Note the Mean free path has a 5% difference comparing to the theoretical value. The mean time of collision is shown in the title.

Q4