PHYS:5905 Homework 5

Chuan Lu

February 19, 2019

1. Small-Angle Collision Scattering Routine

   (a) $\sigma(\theta) = \frac{\pi}{18}$. Figure 1a.

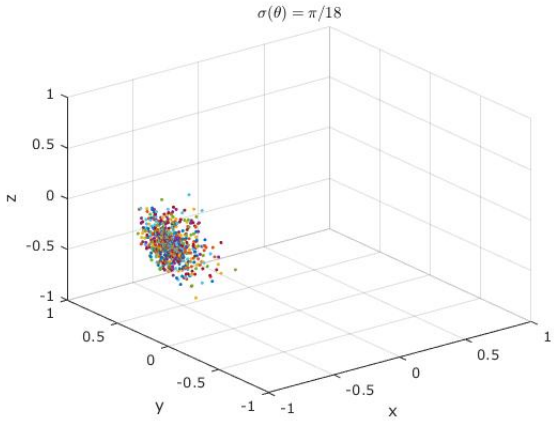

Figure 1: $\sigma(\theta) = \frac{\pi}{18}$.

   (b) $\sigma(\theta) = \frac{\pi}{180}$. Figure 1b.

2. Monte Carlo Collisions

   (a) confinement time τ. Figure 2a.

   (b) plot of v. Figure 2b.

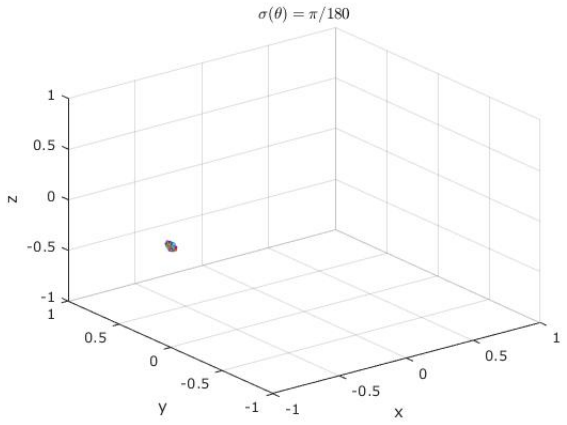

Figure 2: $\sigma(\theta) = \frac{\pi}{180}$.

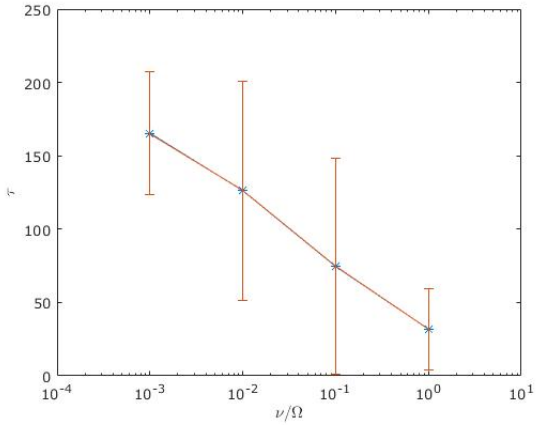

Figure 3: mean and stand deviation of τ.

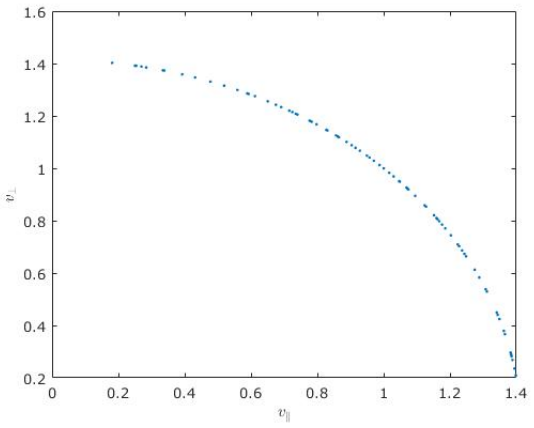

Figure 4: position of particle in $(v_\parallel, v_\perp)$ space when the particle is lost.