

## Exercise 4

Total Points = (7/20), Feel free to clarify things with me (via email/in person)

### Question 1 : Equations of Motion

Wrong for  $\dot{p}_1, \dot{p}_2$  (1/2)

### Question 2 : Leapfrog Convergence

Wrong (0/3)

### Question 3 : Leapfrog Code

Your leapfrog didn't work because your force terms (derivatives) were wrong. (3/5)

### Question 4 : HMC Code

Your code doesn't work because of the leapfrog, and also, your Metropolis criteria is wrong. Also, you were supposed to generate one Markov chain having 1000000 points instead of 1000 chains of varying lengths.(2/5)

### Question 5 : Best Fit Values

Nothing presented (0/4)

### Question 6 : Chiral Limit

Correct, (1/1)