

## Homework 06:

### A1. Nernst-Planck Behavior

Write a random walker simulation (you can use one of the previous solutions as a starting point) that includes the effects of electric force assuming that the particles in the simulation are charged and that an electric field is present. In other words, model the situation of *electrophoretic flux*.

Probably the easiest way to do this is to periodically (not every time step though), move all of the walkers one bin to the left (or right, pick a direction for your force). You'll want to restrict the walkers to a finite domain.

- If you start with a sharp distribution initially, how does it evolve?
- What is the equilibrium configuration? (You may want to start your simulation with a “soft” distribution to hasten the evolution towards equilibrium.)

Do problem 4.4 in the text