ReadMe

This code runs 4 simulations. The first is the Cahn-Hilliard (CH) simulation, the next the E-field of a point charge (Poisson), the third the over relaxation of Gauss-Seidl algorithm (SOR), and the last the magnetisation of a wire (Mag).

Prompts:

>>>simulation (CH/Poisson/SOR/Mag) =

If simulation = CH:

>>>number of steps =

>>>lattice dimensions =

>>>initial phi =

>>>delta x =

>>>animate (Y/N) =

Produces a phase contour plot, and free energy plot and data file.

if simulation == Poisson/Mag:

>>>update type (Jacobi/Gauss) =

>>>number of steps =

>>>lattice dimensions =

>>>delta x = (hard coded as 1 for submitted simulations)

>>>tolerance =

>>>animate (Y/N) =

Produces potential contour plot and data file, and E- or B-field vector plot and data file.

if simulation == "SOR":

>>>number of steps =

>>>lattice dimensions =

>>>delta x =

>>>tolerance =

Produces convergence time against omega plot and data file.