Honors Stat Mech
Project 1

Physics 423 Spring 2017

Due: Wed, Mar. 1

Diffusion-Limited Aggregation (DLA). DLA is a model for the growth of particle clusters in systems where particles can *move by diffusion* and *stick to each other*. The resulting clusters are called Brownian Trees, and they have fractal structure. One way to characterize a fractal is by its correlation dimension.

1. Write a program to simulate DLA in 2D. Follow the rules in Witten & Sander. Try to work in a box of at least 300x300 grid points and make an aggregate of 2000 particles or more.

2. Measure the correlator defined in Witten & Sander on your aggregate. Compare to the power law fit they obtained.