Exercise sheet 7

Diffusion limited aggregation: discrete walk

Diffusion limited aggregation: continuous walk
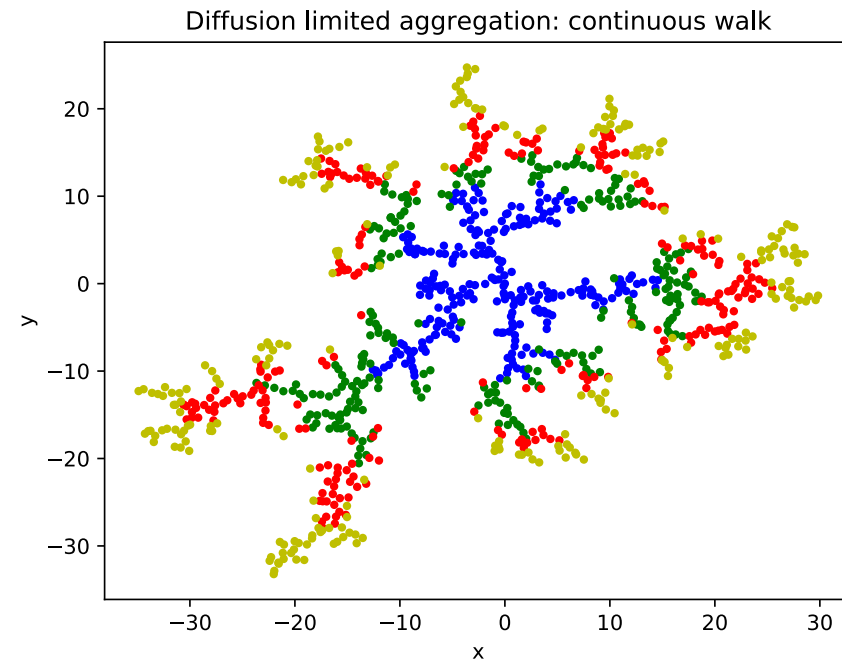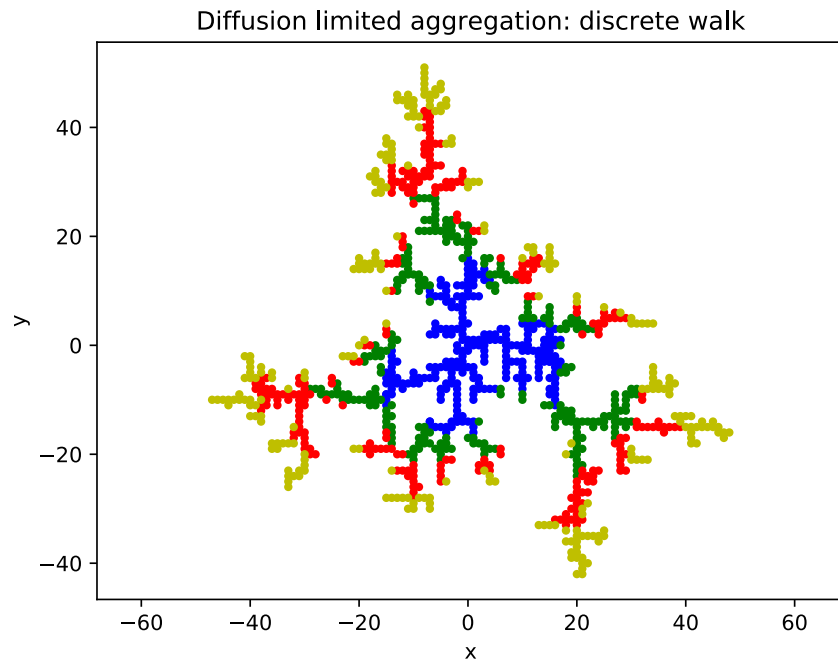
The figure on the left shows an example of Diffusion Limited Aggregation (DLA) performed over a discrete square lattice of maximal length L=240. The side grows at each iteration starting from L=30 to L=120 in steps of step=30 and the random walk is allowed to grow within a square lattice of size L'=L+step. At each iteration the random walk starts from the boundary of the square lattice and is stopped once it either reaches an occupied site or it exceeds the maximal distance. In the first case the last point is added to the graph whereas in the second the random walk is rejected. Each step consists of 250 points and it is identified by a different color and consists.

The figure on the right shows an example of Diffusion Limited Aggregation (DLA) performed over a continuous circular lattice of maximal radius R=120. The side grows at each iteration starting from R=30 to R=120 in steps of step=30 and the random walk is allowed to grow within a radius R'=R+step. In this case the random walk is stopped once it reaches an occupied site with a tolerance of tol=1. Each step consists of 250 points.