

Mini-Project I
(due: Tuesday, **February 24**, 9:30 am)
paper due at beginning of class, presentations in class

Goal of this Mini-Project I is to give you a free hand for your creativity and to get more practice with scientific paper writing and scientific talks.

1. Use a working program for the DLA model. You may use all of the inclass solution programs:

`~kvollmay/classes.dir/phys338.dir/phys338_s2015.dir/fractal.dir/classfractal*.py`
where `classfractal8.py` is the DLA program and `classfractal9c.py` (read permission will be given at the end of today's class) allows you determine the fractal dimension.

For this mini-project do some variation on

either the DLA model
and/or
the analysis.

Examples for Variation on DLA Model:

For example you might change the rules of the DLA model such as incorporating wind, or using different neighbors, or you might try a different seed for the initialization of the lattice, **or any other change of your choice**.

Examples for Variation on Analysis:

For example you might like to count the number of neighbors each particle has, or you might measure `RMAX` as function of `npart` or any other variation on our analysis.

2. Run your program and do some analysis.

3. Write a **paper** about the model you used and the analysis you did and your result(s). The paper (figures included about one latex-page) should contain a short **introduction** which explains clearly which task you tried to do (e.g. change of initial seed to seeds along a whole vertical line in middle of lattice) This can be a section of only one or two sentences. The next section should explain what exactly your new model is, such that everybody in class could write a program, which does exactly the same as what your program does. View this section as the **Model/Simulation** section. For completeness include the rules of the DLA model with reference. Include a description of all parameters you used (e.g. what is your initial condition and the lattice size you used). Then continue with a mini-**results** section, in which you show a figure or two and a description/interpretation of your results. ³ End with a short **conclusions** section and possibly some ideas for future

³Information about any tools introduced in class, such as `xfig` and `xmgrace` are on our webpage. To make a figure from part of your screen you may use in the command-line: `"import filename.eps"` and then select the desired area with the middle mouse button.

work. Since you will have only until Tuesday for this project each section can be relatively short.

4. Prepare a mini **talk** (5 min each student) which has the same content as this mini-project I paper (model, variation(s), results). Prepare two or three slides and practice what you will say. You can find on our webpage links to the “How To Give Talks” and exemplary talks. (last class). Make sure that you can get to your presentation/slides on the computer on the front desk in ACWS 204. If you plan to show a movie, practice ahead of time, that you can get the movie working quickly.

5. Put the name(s) of the python program(s) into your `~/share.dir/` and make it/them readable. Please send to me an email in which you tell me the name(s) of your python program(s).

6. Comments As always, any comments about the course and/or assignment are welcome! Thank you for all your feedback!