Mini-Project I

(due: Tuesday, February 26, 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/inclass2019.dir/classfractal*.py`
Specifically, `classfractal8.py` is the complete DLA program. In case you would like to measure the fractal dimension you may use `classfractal9c.py` (read permission will be given at the end of today's class).

For this mini-project **you 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 you might use different neighbors, **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.

DLA model: [T. A. Witten Jr, L. M. Sander, Phys. Rev. Lett. 47, 1400 (1981)]

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 single-column latex-page) should contain a short **introduction** which explains clearly which task you tried to do (i.e. the change you implemented). 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 citation of the DLA model and specify whether you changed any rules of the DLA model or whether you kept all rules the same. 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. [12] End

[12] Information 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` for an eps-file or `import filename.pdf` for a pdf-file and then select the desired area with the middle mouse button.

with a short **conclusions** section. Since you will have only until Tuesday for this project each section can be very 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 examplatory talks. (today's class). Make sure that you can get to your presentation/slides on the computer, which I usually use, so the computer which is connected to the projector in RCHM009.

5. Put the python program(s) with your variation into your `/share.dir/` and change read permissions with `chmod a+r ~/share.dir/*`
Please send to me an email in which you tell me the name(s) of your python program(s).

Updated Upcoming Deadlines:

- Feb. 26: Mini Project I (next class; paper & mini-talks)
- Feb. 28: Main Project Talks (content same as First Paper)
- Feb. 28: Flow Chart for Main Project first version
- March 5: Program 1st Version
- March 7: I will be at conference, we will make up this class