

The assignment: The goal is to extend what we are talking about in PY566 in more depth in a direction not covered by the material I assigned you. The “deliverable” is a 20-minute talk, followed by 5 minutes of questions from your peers which will be scheduled near the last week of the semester. The work will be graded on the quality of the presentation, and also the depth of the work. You get to choose the topic yourself. Choose something you are interested in!

For your project, it is essential that you properly cite any external sources such as web pages, talks found online, papers, books, preprints and so on. It is not acceptable to simply concatenate text and graphics from other sources. Please include a slide of references on the last page of your presentation. I also expect your talk to be well organized with an **introduction slide**, **conclusion slide** etc. You should explain the subject you wanted to research, show some of the code you used and explain what you did and show results.

I would be pleased to discuss any proposed topics that you would like to initiate. Picking something interesting from your research area is fine. You might try to numerically approach problems described in a paper, or try to build a tool needed for your research. Perhaps you have seen an interesting physics result or plot and you could try to reproduce it.

You might also try to learn about some analysis or signal processing technique often used in science like filtering or something related to microscopy imaging. Maybe you would be interested in modeling a complicated system. This could range from astro-dynamics of some sort to pendula. Perhaps you would like to learn about something like particle tracking techniques. There are calculations necessary in statistics to calculate limits or result from experiments. There is an almost limitless supply of topics. Pick something you want to learn more about and then think about problems you could explore numerically.

Please turn in at least a few sentence proposal by Friday with your homework (put it in the text box). I am happy to discuss with you earlier in person.