**Simulation & Theoretical Work**

All done!

What you can do to keep up:

* Read my thesis which covers all the work other than the experiments.
  + You must be familiar with the forward model already. If you are uncertain about the algorithm or the simulation, feel free to ask me!
* Run the main.py file (commented).
  + Get familiar with all the parameters.
* Run the performance test 1.py and performance test 2.py (with some comments).
  + In the performance test, please sample the PSF laterally 3 times the camera pixel size.
  + Use simulated objects in folder “performance test objects new” with initialization “performance test initials new.” They are larger.
  + 1 is responsible for looking for optimized hyperparameters.
  + 2 is responsible for calculating the error metrics using set hyperparameters.
    - BE CAREFUL. There are tons of plots and files generating when you run 2.

**Experimental Work**

Part done!

What you can do to keep up:

* My presentation slides cover my progress.
  + There are mismatches between the physical setup and the forward model. We need to debug all of them.
* Code is experiment.py. Data are in folder “crop img,” “experiment data,” “images.”
* Major work:
  + Orientation mismatch.
    - Check slides. The localization and the orientation coordinates should match.
  + Fluorescent beads.
    - Collected some fluorescent beads image (isotropic objects).
    - I use STORM to localize the location of the beads. Then, I plug the localization into the forward model to simulate an image. I compare these two images, and there are discrepancies. You can also repeat the process at different z layers to help you debug the system.
  + SLB.
    - I have collected some SLB data you can try to reconstruct them with the current algorithm. The result is bad with weak estimation of orientation (you can recognized some feature though), so I have been working on debugging the forward model.