**Project Description**

For the reasons outlined in the ReadMe file, I’ve decided it might be best to change my topic to the Dripping Faucet problem and, to this end, commenced work on that. My goals for this new topic are as follows:

* Solving the equations of motion using Rk4 and LMM methods
  + Consider solving for differently complicated differential equations
    - [Easy example](https://ac.els-cdn.com/0375960185900659/1-s2.0-0375960185900659-main.pdf?_tid=7875c692-3dfd-42f5-a840-9bb67ac3f81e&acdnat=1542861086_fdc38e32e32c155f123543a45c66f90d)
    - [More Complicated ODE](http://nldlab.gatech.edu/w/images/f/f8/Pritchard_Peter_Phys6268_Final_Paper.pdf)
  + Consider case where drop is not point mass but rather a continuous object with a center of mass must be found \*
* Use Tn vs Tn+1 plots to show development of chaotic attractors
  + Show over a variety of drip rates

**Explanation of Problem / System**

Simulating by solving system using Linear Multistep Methods after N seconds

**Chaotic systems in the Dripping Faucet**

Showing attractor with changes to coefficients / initial conditions

Simulating by solving system using Runge-Kutta Methods after N seconds

* Maybe look into how to create animated simulations?

http://sprott.physics.wisc.edu/fractals/booktext/sabook.htm

VIzualizations of SOlutions

Showing attractor with changes to coefficients / initial conditions

* **Discussion of center of mass/ modelling drop shape?**

**Present more complicated ODE’s**

**and perhaps different attractors as a result**

* **Linear Multistep Methods Explanation**
* Also read about this method of solving ODEs numerically, thought the comparison could be interesting

**Runge-Kutta Methods**

**System of Equations that Must be solved + assumptions of model**