Physics 4222
Fall Term 2019
Homework Problem Set 3

Due Monday, September 23, 2:45 p.m.

Reading: Chapter 12: Sections 12.1, 12.2, 12.3 and 12.9.


Problem 3. cos map on a calculator. Problem 12.21⋆⋆ from the book.


Problem 5. Predator-prey equations. ⋆⋆ Read the wikipedia article on Lotka-Volterra equations

https://en.wikipedia.org/wiki/Lotka%E2%80%93Volterra_equations

Using your favorite software, plot the solution for the number of rabbits $x$ and foxes $y$ in the $(x,y)$ plane, for some chosen values of the parameters $\alpha$, $\beta$, $\gamma$ and $\delta$. Find the candidate fixed points and investigate their stability.