

CS341 SYSTEMS BIOLOGY I

PROJECT 5 (DUE FRIDAY DECEMBER 8)

Your goal is to perform a sensitivity analysis of the parameters in the model of Gonze/Goodwin.

Instructions.

- (1) Use your genetic algorithm to generate 10 excellent parameter sets (i.e. run the algorithm 10 times and use the lowest cost child from each run).
- (2) For each of the parameter sets, analyze the sensitivity of the amplitude and of the period (separately) to each parameter.
- (3) What are the similarities and differences in sensitivity across parameter sets?

Extensions.

- Analyze additional models
- Explore the effects of changing the size of the perturbation used to compute the sensitivities.
- Include an analysis of the sensitivity of state dynamics to parametric perturbation.