

Lecture 19.2 Exercises

1. Implement and explore a Simulink model of a bilateral (push–pull) burst generator like that in figure 19.6. Explore how it behaves for a given error signal and connect it to the eye plant model of Lecture 19.1 Exercise 1 to explore simulating saccades with realistic trajectory time courses.
2. Implement a one-dimensional version of the logarithmic SC map of equations 19.4 and 19.5 and use it as the input to the bilateral burst generator of Exercise 1 to specify a desired eye displacement for saccades.
3. Implement feedback from the burst generator of Exercise 2 to close the loop and simulate realistic saccades with the SC in the feedback loop. Explore the different weights of the feedforward and feedback pathways.
4. Explore the effects of transient stimulation of OPN activity during ongoing saccades (e.g., force the OPN activity on in a model simulation of a regular saccade from Exercise 3).