

Simulation Assignment 1 The Spring Pendulum

In Chapter 3 of your book the first simulation example is the Spring Pendulum. A schematic of the system can be found in Section 2.1 and the equations of motion are derived using Polar coordinates with final equations shown as Eqs. (2.10). In Chapter 3 Section 3.1, the second order equations of motion are reduced to first order form as Eqs. (3.2). The parameters for the system are given in Table 3.1.

Your assignment is to simulate this system and duplicate the outputs from Figures 3.2, 3.3, 3.4, and 3.5.