

1. Discretize the system with a sample period of 0.1s.
2. Verify the asymptotical stability (or not) of the system
3. Simulate the system under autonomous behavior
4. Apply a LQT to make the state track a given function
5. Show examples with noise on the system, and on the measure of the state, also taken into account an output y=Cx where C may also be a singular matrix or rectangular.
6. Show examples (Matlab and Simulink) on the performance of one (two?) PID used to do the same task