04.2 steady.exe Exercises for Chapter 04 steady

Exercise 04.1 hypnomancy

If a control system responds to a command $r(t) = 1$ such that its output $y(t)$ quickly settles near 0.95, what can be said about the control system's *stability*, *steady-state response*, and *transient response*?

05 rlocus

Root locus analysis

The **root locus** is a graphical technique for designing for closed-loop transient response from open-loop knowledge—and some cleverness.[1] A system's transient response is dominated by its poles. For a system with feedback, solving for these closed-loop poles is challenging, as we will see in Lec. 05.1 rlocus.def.

Due to the use of complex analysis in this chapter, it is recommended that the reader review Appendix A.01 before proceeding.

1. The root locus technique was developed by Evans (1950).