

steady.exe Exercises for Chapter steady

Exercise steady.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*?

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. rlocus.def](#). Due to the use of complex analysis in this chapter, it is recommended that the reader review [Appendix A.01](#) before proceeding.

root locus

1. The root locus technique was developed by Evans. (W. R. Evans. "Control System Synthesis by Root Locus Method?" in *Transactions of the American Institute of Electrical Engineers*: 69.1 [January 1950], pages 66–69. ISSN: 0096-3860. DOI: 10.1109/T-AIEE.1950.5060121)