Observer-Based Control — 1

- Recall that for LSF control: $u(t) = -Kx(t)$
- What if $x(t)$ is not available, i.e., it can only be estimated?
- **Solution:** get $\hat{x}$ by designing L
- Apply LSF control using $\hat{x}$ with a LSF matrix K to both the original system and estimator
- **Question:** how to design K and L simultaneously? Poles of the closed-loop system?
- This is called an observer-based controller (OBC)
- Design questions: how shall we design K and L? Are these designs independent?