Lecture 10

Review: Identification of LTI

• Given only the input u_k and the output y_k over a period $k \in \{0, ..., T\}$, determine:

1. The unknown order and relative degree

2.All system parameters (A,B,C) and states $\{x_k\}$ for $k \in \{0,...,T\}$

Review

- Time v. frequency domain
- Transfer functions, Bode plots

Today

- Least Squares
- Recursive Least Squares
- Weighted Least Squares

Least Squares Example



Limitation: need to store all the previous data to compute the present estimate