

Lecture 25 — April 19

Lecturer: Venkat Anantharam

Scribe: none

This lecture was not scribed.

We discussed the LSE (least squares estimate) based identification procedures for AR-MAX systems, following Chapter 10 of the book of Kumar and Varaiya. We discussed consistency and asymptotic convergence of the LSE estimate to the true parameters for the case of systems where there is no auto regressive term and no moving average term: just the exogenous excitation, and this too chosen off-line. We recognized the relevance of the *persistence of excitation* condition in proving these results. We then discussed the ARX model and proved the main theorem (Thm (4.15) on pg. 203 of Chapter 10 of the book of Kumar and Varaiya) about asymptotic convergence of the LSE estimate to the true parameters in this case.