Advanced Control Systems II

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Content

1. Dynamic Programming
2. Probability Theory
3. Least square (LS) estimation
4. Stochastic state estimation (Kalman Filter)
5. Linear Quadratic Gaussian (LQG) Control
6. Principles of Feedback design
7. Descretization and Implementation of Continuous-time Design
8. LQG / Loop Transfer Recovery (LTR)
9. LQ with Frequency Shaped Cost Function (FSLQ)
10. Feedforward Control: Zero Phase Error Tracking
11. Preview Control
12. Internal Model Principle and Repetitive Control
13. Disturbance Observer
14. System Identification and Recursion

15. Stability of Parameter Adaptation Algorithms.

16. PAA with Parallel Predictors

17. Parameter Convergence in PAAs

18. Adaptive Control based on Pole Assignment.

Appendix

1. Stability of Linear Systems (Part1, Part2, Part3)

2. Linear Systems: Controllability & Observability.
   {Kalman decomposition}

3. Controllability & Observability
   {Lecture notes ME547}