POLITECNICO DI MILANO - SEDE DI COMO

MODEL IDENTIFICATION AND ADAPTIVE SYSTEMS

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Final Exam – September 7, 2017

Answer the following questions:

1) Illustrate the concepts of excitation subspace and persistence of excitation in the convergence analysis of recursive identification algorithms.

2) With reference to a basic adaptive filtering problem with a FIR filter describe the structure and properties of the Mean Square Error criterion. What is the Wiener-Hopf equation?

3) Explain how the extended observability and reachability matrices can be used to find the F, G, and H matrices of a system.

4) Illustrate the Volterra series.

Instructions:

- Report your name and identification number on the top right corner of the first page.
- Use separate pages for answers to different questions (one page for each question).
- Books, course slides, notes are not allowed.