POLITECNICO DI MILANO - SEDE DI COMO

MODEL IDENTIFICATION AND ADAPTIVE SYSTEMS

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Academic year 2015/16
Final Exam – February 14, 2017

Answer the following questions:

1) Discuss the difference between the Recursive Maximum Likelihood (RML) and the Extended Least Squares (ELS) algorithms for the identification of ARMAX models.
2) Illustrate briefly the main variants of the basic Least Mean Squares (LMS) algorithm: normalized LMS, correlation LMS, leaky LMS, etc.
3) Describe how one can estimate the system matrices F, G, and H from the extended observability and reachability matrices.
4) Illustrate the structure of a Hammerstein-Wiener model and describe how its parameters can be estimated.

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.