*POLITECNICO DI MILANO - SEDE DI COMO*

# MODEL IDENTIFICATION AND ADAPTIVE SYSTEMS

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Academic year 2016/17
Final Exam – February 15, 2018

Answer the following questions:

1) Illustrate the Extended Least Squares (ELS) algorithm.
2) Illustrate the role of the eigenvalues of the input autocorrelation matrix regarding the stability and convergence properties of the LMS algorithm.
3) Under what conditions is the convergence of the solution of the Difference Riccati Equation (DRE) guaranteed?
4) Illustrate the regularization approach to nonlinear model selection. Discuss the LASSO method in particular.

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.