

## SEMINAR ANNOUNCEMENT

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**WHAT: A Few Principles of Estimation Theory**

**WHEN:** Monday, 10 March 2014, 10:00–12:00

Tuesday, 11 March 2014, 9:00–11:00

Wednesday, 12 March 2014, 9:00-13:00

**WHERE:** Dipartimento di Ingegneria, Centro Direzionale di Napoli, Isola C4 – Aula Savarese

### **Abstract**

Measurement = estimation. This is true for many disciplines like data transmission/detection, remote sensing, geodesy etc. The lecture covers basic principles of estimation theory. Due to the lack of time only a few topics will be presented in the following chapters:

- Basics of probability theory: PDFs, Bayes theorem
- Parameter estimation basics: accuracy vs. robustness, Cramér-Rao-Lower-Bound (CRLB) of estimation error
- Time and frequency estimation: optimal estimator, accuracy, CRLB
- Optimal linear estimation for the multi-parameter problem
- Model selection: Ockham's razor, evidence
- Sparsity as a prior: sparse signals, compressive sensing, L0 vs. L1 norm regularization