



Prof. dr. ir. Ivan Markovsky (email: [Ivan.Markovsky@vub.ac.be](mailto:Ivan.Markovsky@vub.ac.be))

Fundamental Electricity and Instrumentation (ELEC), faculty of engineering, Vrije Universiteit Brussel, Belgium. *Recipient of a Starting ERC Grant.*

**Title:** Low-Rank Approximations and its Applications in System Identification and Signal Processing.

**Abstract:** State-of-the-art data processing methods are model based and require a model identification step prior to solving the data processing problem. Starting with a review of classical system identification, this talk presents a model-free data processing approach, in which model parameters need not be explicitly estimated. The underlying computational tool in the new setting is low-rank approximation of a structured matrix constructed from the data. Preserving the structure in the approximation leads to statistically optimal estimators as well as to fast computational methods.