

**A UNIFIED APPROACH TO MULTI-BLOCK AND
MULTI-GROUP DATA ANALYSIS**

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**RECENT ADVANCED ON REGULARIZED GENERALIZED
CANONICAL CORRELATION ANALYSIS**

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Abstract

On the one hand, multi-block data analysis concerns the analysis of several sets of variables (blocks) observed on the same set of individuals. On the other hand, multi-group data analysis concerns the analysis of one set of variables observed on a set of individuals taking into account a group-structure at the level of the individuals.

Many methods exist for multi-block and multi-group data analysis. Regularized Generalized Canonical Correlation Analysis (RGCCA) was proposed in Tenenhaus & Tenenhaus (2011) and appeared to include an amazing large number of criterion-based multi-block data analysis methods as particular cases.

During the talk, it will be presented RGCCA and two recent extensions of RGCCA:
(i) The first one concerns variable selection within RGCCA. How to identify relevant variables of each block which are active in the relationships between connected blocks.
(ii) The second one concerns an extension of RGCCA to Reproducing Kernel Hilbert Spaces.

MERCOLEDÌ 19 GIUGNO 2013- ORE 14,30
AULA SEMINARI 4026
IV° PIANO EDIFICIO U7