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On the rank-sparsity decomposition problem

The rank-sparsity decomposition problem is motivated by the need to extract, from data collected by a large-scale sensor network, a (sparse) model, partially hidden, and a small number of sources of noise (low rank). This type of problem has inherent interest from the applications perspective, arising in a number of settings such as the statistical model selection, the rigidity of a matrix, and the system identification, to name a few. It has also a clean description as a type of nonlinear discrete-optimization problem for which powerful methods to address large-scale problems are of great interest, being currently under investigation. In this presentation, the advances derived from the cooperation agreement FAPESP-University of Michigan, in collaboration with prof. Jon Lee (UM), prof. Marcia Fampa (UFRJ) and the PhD student Ivan Nascimento (IMECC-Unicamp) will be reported.