5005-C1-35 **Christine De Mol*** (demol@ulb.ac.be), ULB Dept Math, Campus Plaine CP 217, Bd du Triomphe, 1050 Brussels, Belgium. *Sparsity and group-sparsity in regression and inverse problems.*

Sparse solutions of regression, learning or inverse imaging problems are needed for a range of applications including microarray and economic data analysis. We formulate the problem as the minimization of a least-squares discrepancy with a sparsity or group-sparsity enforcing penalty. We state regularization theorems which apply to inverse problems with errors in the data and in the operator and probabilistic consistency results which apply to learning theory. Finally, we analyze and compare several iterative algorithms which can be used to compute such sparse solutions. (Received May 29, 2007)