Time: 10:00am-11:00am, Wednesday July 14, 2010
Place: #1 Science Building 1114, PKU (理科一号楼1114)

Talk: Sparse Hierarchical Dictionary Learning
Speaker: Francis Bach
            INRIA - Ecole Normale Superieure

Abstract:
We consider the combination of two approaches for modeling data admitting sparse representations: On the one hand, dictionary learning has proven very effective for various signal restoration and representation tasks. On the other hand, recent work on structured sparsity provides a natural framework for modeling dependencies between dictionary elements. We propose to combine these approaches to learn dictionaries embedded in a hierarchy. Experiments show that for natural image patches, learned dictionary elements organize themselves naturally in such a hierarchical structure, leading to an improved performance for restoration tasks. When applied to text documents, our method learns hierarchies of topics, thus providing a competitive alternative to probabilistic topic models. (joint work with Rodolphe Jenatton, Julien Mairal and Guillaume Obozinski).