

Title:

Bayesian sparsity enforcing methods for general inverse problems

Abstract:

Sparse signal and image representation and modeling has recently been the focus of many researchers in many applications and has been used in signal and image reconstruction from direct sparse samples.

The main idea is to use an over-complete basis with the desired properties and project the interested signal or image on that basis in the optimal way of keeping the least number of coefficients.

Sparse signal and image representation also has been used as prior modeling in inverse problems arising in different signal and image processing, in particular, medical or industrial imaging systems.

The main difficulty in inverse problems is their ill-posedness nature.

Regularization methods have been proposed to introduce prior information and in particular the sparsity of the solution.

The Bayesian estimation approach with the sparsity enforcing of the solutions to inverse problems is the focus of this talk.