Riemannian thresholding methods for row-sparse and low-rank matrix recovery

André Uschmajew
MPI MiS Leipzig
uschmajew@mis.mpg.de

The problem of recovering a jointly row-sparse and low-rank matrix from linear measurements arises for instance in sparse blind deconvolution. The ideal goal is to ensure recovery using only a minimal number of measurements with respect to the combined constraints. We present modifications of the iterative hard thresholding (IHT) method for this task. In particular a Riemannian version of IHT is considered which significantly reduces computational cost of the gradient projection in the case of rank-one measurements. We also consider a Riemannian proximal gradient method for the special case of unknown sparsity. This is joint work with H. Eisenmann, F. Krahmer and M. Pfeffer.