Title: Compressed Sensing for Filtered Sparse Processes.

We consider compressive sensing aspects for filtered sparse processes. An unknown sparse signal, U, is filtered through an unknown linear stable filter, H. The problem of estimating U and H is commonly referred to as blind deconvolution. In our setting we consider a compressive sensing scenario, namely, the resulting output, X, is further compressed either through random projections or random filtering. The goal is to reconstruct the stable filter as well the unknown signal from the compressed output. We consider different models for H including Auto-Regressive, Moving Average, and non-causal scenarios. We develop a novel linear programming optimization algorithm and show that both the unknown filter H and the sparse input U can be reliably estimated under suitable assumptions. Specifically we show that if U is a k-sparse, n-dimensional signal then both U and H can be reliably estimated with O(klog(n)) measurements. We also present noisy extensions of this problem.