Geometric sparsity and structured compressed sensing

Irena Stojanoska
stojanoska@math.tu-berlin.de

Technische Universität Berlin

23 May 2013

Abstract

Compressed sensing is a novel methodology in data processing which takes advantage of the fact that most signals admit a sparse representation. In such a case it then allows to recover the signal from considerably less measurements than those required by traditional methods.

We are interested in exploiting additional information about the signal, namely having sparse geometric structure. One goal in this setting is to improve the compressed sensing results over those where no structure is assumed. Another goal is to broaden the range of applications of the compressed sensing methodology.

In this talk we will present the signals consisting of unions of discrete lines as the simplest case of geometric sparsity. We will discuss their properties and the application of compressed sensing to such signal models.