

Title: Variable selection in high-dimensional linear regression via advanced regularization methods.

Abstract:

During the seminar, I will present the main area of my scientific interests. In particular, I will talk about the problem of selecting significant variables in high-dimensional linear regression and generalized linear models. In recent years, advanced regularization methods such as the SLOPE method have been gaining popularity in this area, e.g. it has been proven that the SLOPE method with an appropriate sequence of regularization parameters controls the FDR at a given level for orthogonal and "nearly" orthogonal design matrices.

During the seminar I will present the current theoretical results and some directions for further development.

Literature:

1. M. Bogdan, E. van den Berg, C. Sabatti, Su. W., and E.J. Candès. Slope – adaptive variable selection via convex optimization. *Annals of Applied Statistics*, 9(3):1103–1140, 2015.
2. Kos M, Bogdan M, On the Asymptotic Properties of SLOPE. *Sankhya A* 82, 499–532