On Generalized Procrustes Problem

By *Marko Stošić* and João Xavier.*

In this talk we present a new approach to the generalized Procrustes problem: For given real matrices $A \in \mathbb{R}^{n \times 3}$ and $B \in \mathbb{R}^{n \times 2}$, find the Stiefel matrix $Q \in \mathbb{R}^{3 \times 2}$ (i.e. such that $Q^T Q = I_2$), that minimizes the Frobenius norm of $B - AQ$. We rewrite this problem as the more general Quadratic Programming program, and give fast algorithm for its (partial) solutions. The solution is based on the computation of convex hulls of various sets of matrices.