

Title: Methods for special structured matrix optimization problems

Abstract: Consider the sum rate maximization problem for MIMO relay networks in wireless communications. A new approach is proposed as the lower bound of achievable sum rate. The alternating minimization method is applied. Efficient methods are proposed for the subproblems as nonconvex quadratic constrained quadratic programming and those with orthogonality constraints, where KKT points or optimal solutions are guaranteed. Simulations show the superior performances of our proposed models and algorithms.