

1135-VN-2192 **Alexander Putnam Barnes*** (apbarnes1@crimson.ua.edu) and **Brendan Ames**. *Heuristics of Large-Scale Semidefinite Programming*.

Large-scale semidefinite programming has many applications, including optimal control, computer vision, and machine learning. However, current algorithms for solving semidefinite programs (SDPs) can be time consuming and memory intensive. We look at new heuristics for the solutions of SDPs based on non-convex factorization, the augmented Lagrangian method, and alternating minimization. In particular, we will focus on solutions of semidefinite relaxations for the k-clique and k-cluster programs. We will present numerical results illustrating the efficacy of our approach for clustering of real and simulated data. (Received September 25, 2017)