Math 295 - Mathematics Colloquium

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Large Scale Semidefinite Programming: Theory and Algorithms

Abstract:
Recent developments in numerical optimization show that the augmented Lagrangian method (ALM) is very effective in solving large scale convex semidefinite programming. Due to the possible lack of primal-dual-type error bounds, it was not clear whether the Karush-Kuhn-Tucker (KKT) residuals of the sequence generated by the ALM for solving convex semidefinite programming converge superlinearly. We resolve this issue by establishing the R-superlinear convergence of the KKT residuals generated by the ALM under only a mild dual-type error bound condition, for which neither the primal nor the dual solution is required to be unique.

Host: Jiawang Nie

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