

1096-49-2622

**Ahad Dehghani\*** (ahad.dehghani@mcgill.ca), , Canada, and **Jean-Louis Goffin** and **Dominique Orban**. *On Handling Free Variables in Semidefinite Programming Using a Primal-Dual Regularized Interior-Point Method.*

Interior-point methods in semidefinite programming (SDP) require the solution of a sequence of linear systems which are used to derive the search directions. Safeguards are typically required in order to handle rank-deficient Jacobians and free variables. We propose a primal-dual regularization to the original SDP and show that it is possible to recover an optimal solution of the original SDP via inaccurate solves of a sequence of regularized SDPs for both the NT and dual HKM directions. This work is a generalization of recent work by Friedlander and Orban for quadratic programming. (Received September 17, 2013)