

**First Experiments towards Second Order Implementations of the Spectral Bundle Method**

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The usefulness of semidefinite optimization is increasingly recognized in ever wider areas of mathematics and entails increasing demand for efficient and hopefully reliable numerical solvers. The spectral bundle method is a nonsmooth first order solver developed for large scale semidefinite optimization. In theory it is well known through the work of Oustry how to combine this first order approach with the second order approach of Overton, but no tool offering this functionality is available and it is not clear how to best approach this in a large scale setting. In this presentation we report on work in progress towards including second order functionality in a practical implementation of the spectral bundle method within the ConicBundle callable library and present some first numerical results for instances of semidefinite relaxations of some combinatorial optimization problems.