Prof. Dr. Christoph Buchheim
Prof. Dr. Petra Mutzel
Prof. Dr. Peter Recht

GEMEINSAMES

K O L L O Q U I U M
"OPTIMIERUNG UND OPERATIONS RESEARCH"

DER WIRTSCHAFTS- UND SOZIALWISSENSCHAFTLICHEN FAKULTÄT,
DER FAKULTÄT FÜR INFORMATIK UND DER FAKULTÄT FÜR MATHEMATIK

Im Rahmen des Kolloquiums spricht

Frau Prof. Dr. Anita Schöbel,
Georg-August-Universität Göttingen,

zum Thema

New Approaches to Robust Optimization

Der Vortrag findet statt am

Donnerstag, 13. März 2014, 14:00 Uhr

im Hörsaal 4, Hörsaalgebäude II.

Interessierte Hörerinnen und Hörer sind herzlich willkommen!

Der Vortrag richtet sich auch an Studierende der Mathematik, der Wirtschaftsmathematik und der Informatik mit Vorkenntnissen in Optimierung und/oder Operations Research.

Ch. Buchheim, P. Mutzel, P. Recht

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Zusammenfassung:

Many practical problems suffer from inaccurate, missing, or unreliable input data. This is a severe problem, since even small changes can make an optimal solution completely useless for practice. Robust optimization approaches try to hedge against uncertain data. The goal is to find solutions which are good for all scenarios contained in some given uncertainty set. In this talk we will give a short overview on models for robust optimization and present some approaches which do not suffer from the conservatism of the "classical" concepts ([BTGN09]).

- We generalize the recent concept of light robustness originally introduced in [FM09] to general optimization problems and analyze its properties. We are able to show that we receive problems of the same type as the original problem in many cases.
- We furthermore develop a new generic approach to recovery robustness (see, e.g., [LLMS09]) which enables us to generate robust solutions whenever a solution procedure for the certain optimization problem is known. For this approach we derive two variants, recovery to optimality and recovery to feasibility (joint work together with Marc Goerigk, see [GS11, CGKS13, GS13]). We present an analysis of these approaches for different structures of the uncertainty set and experimentally evaluate their performance.

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