VORträge zum Operations Research

Kolloquium des Instituts für Operations Research

Zeit:	Donnerstag, 21. April 2011, 17:30 Uhr
Ort:	Raum 111, Gebäude 20.13
Es spricht:	Dr. Pradyumn Shukla, AIFB, Karlsruher Institut für Technologie
Zum Thema:	**Levenberg-Marquardt Techniques for Optimization and Complementarity Problems**

Abstract: The Levenberg-Marquardt algorithm is a classical method for solving nonlinear system of equations that can come from various applications in engineering and economics. Recently, Levenberg-Marquardt methods turned out to be a valuable principle for obtaining fast convergence to a solution of the nonlinear system if the classical nonsingularity assumption is replaced by a weaker error bound condition. In this way also problems with nonisolated solutions can be treated successfully. Such problems increasingly arise in engineering applications and in mathematical programming.

In this talk, we propose Levenberg-Marquardt algorithms for solving multi-objective optimization and nonlinear complementarity problems. We investigate their convergence properties and the assumptions under which an error bound condition holds. Moreover, we treat nonsmooth equations arising from reformulating complementarity problems by means of NCP functions. For these reformulations, we show that existing smoothness conditions are not satisfied at degenerate solutions. We present new results for positively homogeneous functions. These results are used to show that appropriate weaker smoothness conditions (enabling a local Q-quadratic rate of convergence) hold for certain reformulations.

Die Vorträge zum Operations Research wenden sich an alle Interessierten!

Ab 17:00 Uhr ist am Institut für Operations Research (Gebäude 20.13, Raum 104) Gelegenheit zu einem Gespräch mit dem Referenten bei einer Tasse Kaffee gegeben.

Bei Rückfragen wenden Sie sich bitte an:

Prof. Dr. Oliver Stein, Institut für Operations Research.