Universität Karlsruhe (TH)
Fakultät für Wirtschaftswissenschaften

Karlsruhe Institute of Technology

VORträge zum Operations Research

Kolloquium des Instituts für Operations Research

Zeit:	Mittwoch, 18. April 2018, 12:00 Uhr
Ort:	Raum 124, Gebäude 09.21
Es spricht:	Frau M. Sc. Julia Niebling, TU Ilmenau
Zum Thema:	**A New Discarding Test for a Branch-and-Bound based Algorithm for Nonconvex Multiobjective Optimization**

Abstract: Multiobjective optimization problems appear in engineering or economics each time when various objective functions have to be minimized simultaneously. In general there is no point which minimizes all objective functions at the same time and thus one uses another optimality concept than the one in scalar optimization. As a consequence of this a multiobjective optimization problem has in general in finitely many optimal solutions and it is now of special interest to calculate an approximation of the solution sets in the decision and image space. In this talk, we introduce a new branch-and-bound based algorithm for smooth nonconvex multiobjective optimization problems, which computes an (epsilon,delta)-approximation of all globally optimal solutions. The new algorithm uses selection rules, discarding and termination tests. The discarding tests are the most important aspect, as they examine in different ways whether a box can contain optimal solutions and determines by that the speed and effectiveness of the algorithm. We present a new discarding test which combines techniques from the αBB method from global scalar-valued optimization with outer approximation techniques from convex multiobjective optimization and the concept of local upper bounds from combinatorial multiobjective optimization. Moreover some numerical results will be presented.

Die Vorträge zum Operations Research wenden sich an alle Interessierten!

Bei Rückfragen wenden Sie sich bitte an:
Prof. Dr. Oliver Stein, Institut für Operations Research.