



Im Rahmen des Kolloquiums des
Graduiertenkollegs Algorithmic Optimization
findet am

Montag, 9. Mai 2016
16 h c.t.
Hörsaal 10

folgender Vortrag statt:

Strongly Polynomial Time Approximation Schemes for Packing Problems (Joint work with Michael Holzhauser)

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Abstract

We present a generalization of the fractional packing framework introduced by Garg and Koenemann (2007) that incorporates Megiddo's (1979) parametric search technique: Given a polyhedral cone that is finitely generated by a (possibly exponential-size) set of non-negative vectors and given an oracle that returns a vector in this set with minimum cost with respect to a given cost vector, we obtain a fully polynomial-time approximation scheme for the problem of minimizing a linear cost function over the cone subject to a set of packing constraints. This general framework yields several applications for budget-constrained versions of well-known flow problems such as

- budget-constrained maximum flow
- budget-constrained minimum cost flow
- budget-constrained minimum cost generalized flow
- budget-constrained minimum cost flow in processing networks.

For all of these problems, we are able to derive strongly polynomial-time FPTAS using the generalized fractional packing framework.

Gastgeber:

Prof. Dr. Sven de Vries