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FAKULTÄT FÜR MATHEMATIK
Dekan Univ.-Prof. Dr. Christian Krattenthaler

Einladung zur öffentlichen Defensio von

Claus Griessler

Thema der Dissertation:

**Variants of c -cyclical monotonicity and optimality in
transport problems**

Abstract:

In the early 2000s, several authors established a characterization of solutions to the Monge-Kantorovich problem of Optimal Transport by c -cyclical monotonicity. In recent years, modifications of that problem have popped up repeatedly, particularly in the field of mathematical finance. In this talk, I will present some results on corresponding modifications of c -cyclical monotonicity.

First, a result on the sufficiency of c -cyclical monotonicity in the Monge-Kantorovich problem with n marginals will be presented.

Second, I will talk about c -finite minimality, a notion introduced by Beiglböck and Juillet for the martingale transport problem. I present an extension of their result on the sufficiency of c -finite minimality for optimality, together with a simple proof of the uniqueness of left-monotone martingale measures based on this extension.

Third, c -monotonicity is introduced as a generalized notion that turns out to be a necessary condition for optimizers in a large class of problems. To demonstrate its potential usefulness, I will close with an application to a problem of Optimal Transport with a continuum of marginals prescribed. (This part represents joint work with M. Beiglböck.)

Prüfungssenat:

Univ.-Prof. Dr. Josef Hofbauer (Vorsitz)
(Universität Wien)

Univ.Prof. Dipl.-Ing. Dr.techn. Mathias Beiglböck
(Technische Universität Wien)

Prof. Dr. Stefan Gerhold
(Technische Universität Wien)

Prof. Dr. Christian Bayer
(WIAS Berlin)

Zeit: Freitag, 02. Dezember 2016, 14:30 Uhr

Ort: Fakultät für Mathematik, Besprechungsraum 09. Stock, Oskar-Morgenstern-Platz 1