February 8th, 2016
KAP 414
2:00 P.M. – 3:00 P.M.

Professor Marcel Nutz

(Columbia University)

"Martingale Optimal Transport and Beyond"

Abstract: We study the Monge--Kantorovich transport between two probability measures, where the transport plans are subject to a probabilistic constraint. For instance, in the martingale optimal transport problem, the transports are laws of martingales. Interesting new couplings emerge as optimizers in such problems. Constrained transport arises in the context of robust hedging in mathematical finance via linear programming duality. We formulate a complete duality theory for general performance functions, including the existence of optimal hedges. This duality leads to an analytic monotonicity principle which describes the geometry of optimal transports. Joint work with Mathias Beiglböck, Florian Stebegg and Nizar Touzi.