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Einladung

Am Mittwoch, dem 24. Mai 2017, 09:15 Uhr, im Raum 41/705, hält

Herr Dr. Asgar Jamneshan (Universität Konstanz)

im Rahmen des Forschungsseminars "Optimierung und Approximation" einen Vortrag zum Thema

"An approach to vector duality and stochastic optimization based on the theory of conditional sets".

Abstract. We present two applications of the theory of conditional sets in optimization. First, we show how results in abstract conditional duality can be applied to obtain dual representations for vector-valued functions with domain a normed vector space X and with values in \mathbb{R}^d and $L^0(\Omega, \mathcal{X}, \mu)$, respectively, where $L^0(\Omega, \mathcal{X}, \mu)$ denotes the space of real-valued measurable functions on the measure space Ω modulo almost everywhere equality. Note that $L^0(\Omega, \mathcal{X}, \mu)$ contains all L^p -spaces. We can explicitly describe the dual elements. In the \mathbb{R}^d case, the dual elements lie in $(X')^d$, while in the $L^0(\Omega, \mathcal{X}, \mu)$ case, they lie in the Bochner space $L^0(X', (\Omega, \mathcal{X}, \mu))$ of X' -valued strongly measurable functions modulo almost everywhere equality where X' denotes the norm dual of X . We will carefully explain the underlying notions of convexity, semi-continuity, monotonicity and weak and strong topologies. The duality is based on extension results for vector-valued functions the main construction elements of which will be sketched. Second, we show that results in finite dimensional conditional analysis, in particular the notion of L^0 -compactness, help to establish existence for a class of parameter-dependent stochastic optimization problems. These problems can be viewed as a coupled forward backward system in finite discrete time. We discuss applications in wealth-dependent utility maximization and dynamic risk-sharing problems. On a technical level, we provide a link between the concept of normal integrands and measurable selections on the one hand and conditional analysis techniques on the other hand. This talk is based on joint works with S. Drapeau, M. Kupper and J.M. Zapata.

Alle Interessenten sind herzlich eingeladen.

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