

January 14th, 2019
KAP 414
2:00 P.M. – 3:00 P.M.

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**“Quasiconvex Set-Valued Risk Measures:
Compositions and Duality Theory”**

Abstract: We consider set-valued risk measures that are defined as compositions of two set-valued functions. Many examples of systemic risk measures studied in the recent literature as well as shortfall and market risk measures for multi-asset markets with frictions can be seen as examples of such risk measures. In particular, convex scalarizations of set-valued risk measures can also be embedded into this framework. We pay special attention to the relationship between the convexity properties of the constituent set-valued functions and those of the composite risk measure. It turns out that the so called natural quasiconvexity property, an old but not so well-known property between convexity and quasiconvexity, plays a key role in the study of these risk measures. Our main results provide dual representations for compositions in terms of the dual representations of the constituents.