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FAKULTÄT FÜR MATHEMATIK
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Einladung zur öffentlichen Defensio von

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Thema der Dissertation:

**Optimal Portfolios: Transaction Costs and Shadow
Prices**

Abstract:

We study the utility maximization problem from terminal wealth in a financial market with transaction costs. The main concern is the existence of a so-called shadow price, i.e., a least favorable frictionless market extension which lies within the bid-ask spread of the original market with transaction costs, such that trading in this fictitious market leads to the same maximal expected utility and optimal strategy. If the shadow price exists, the behavior of an economic agent in the market with transaction costs can be explained by passing to a suitable frictionless shadow market. Using duality methods, we show the existence of shadow prices in different settings.

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