

# FIM

# Nachdiplomvorlesung

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## Dependence, risk bounds and optimal portfolios

23 February to 1 June 2018

Fridays, 10:15 - 12:00

HG G 43, ETH Zürich, Rämistrasse 101

### Abstract

In this lecture series a main focus is on the description of the influence of dependence on price or risk functionals in multivariate or continuous time stochastic models. In particular we are interested in the description of the impact of dependence information on the formulation of risk bounds, on the range of portfolio risk measures and on the size of pricing intervals. On the other hand dependence is a useful tool for the construction of optimal claims and portfolios. We discuss applications in the frame of Lévy and more general semi-martingale models.

We will point out general methodological tools for dependence modeling and analysis. In particular we discuss extensions of the classical Hoeffding-Fréchet bounds, the use of stochastic dependence orderings and describe the development and wide range of applications of results from mass transportation, which is a main instrument for this kind of problems.

[www.fim.math.ethz.ch/lectures](http://www.fim.math.ethz.ch/lectures)