Title of the talk: Mean--Risk Portfolio Selection Models in Continuous Time

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Abstract: This paper is concerned with continuous-time portfolio selection models where the objective is to minimize the risk subject to a prescribed expected payoff at the terminal time. The risk is measured by the expectation of a certain function of the deviation of the terminal payoff from its mean. First of all, a model where the risk has different weights on the upside and downside variance is solved explicitly. The limit of this weighted mean—variance problem, as the weight on the upside variance goes to zero, is the mean--semivariance model which is shown to admit {\it no} optimal solution. This negative result is further generalized to a mean--downside-risk portfolio selection problem where the risk has non-zero value only when the terminal payoff is lower than its mean. Finally, a general model is investigated where the risk function is convex. Sufficient and necessary conditions for the existence of optimal portfolios are given. Moreover, when the existence is assured, optimal solutions are obtained.

This is a joint work with H. Jin and X. Zhou of Chinese University of Hong Kong.