

prof. dr. sc. Jakša Cvitanić

Theory of optimal contracts in diffusion models

This talk will give a survey of recent results in continuous-time contract theory, and discuss open problems and plans for further research on this topic. The general question is how a “principal” (a company, investors...) should design a payoff for compensating an “agent” (an executive, a portfolio manager...) in order to induce the best possible performance. We will discuss the following frameworks:

- (i.) the principal and the agent have same, full information;
- (ii.) the principal cannot monitor agent's actions
- (iii.) the principal does not know agent's type
- (iv.) the time of payment may be random

In addition to executive and portfolio managers compensation, we will discuss the application of finding the optimal contributions by a company to its pension fund.

The mathematical tools used are those of stochastic control theory and Forward Backward Stochastic Differential Equations, and leads to some unresolved questions of existence and uniqueness.