23rd IFIP TC7 Conference on System Modelling and Optimization

Invited session proposal

Organizers: Ł. Stettner and J. Zabczyk

Title of the session: **Stochastic control and mathematical finance**

The purpose of the session is to present recent advances in stochastic control and its applications in mathematics of finance. Rapid development of mathematics of finance in the last 10 years stimulated intensive studies and areas of research in stochastic control. Stochastic control methods are used in arbitrage and pricing, portfolio analysis and in risk theory. In addition the methods of stochastic control play an important role in system modelling, filtering, queuing networks, manufacturing systems and telecommunication. Important factor stimulating progress in stochastic control is due to increasing computing capacities. They allow to apply complicated stochastic models and calculate feasible strategies. The session is originally planned for eight 30 minutes lectures. The organizers shall however adjust the size of the session to the number of applications.