复旦大学数学科学学院

数学综合报告会

报告题目：Comparison theorems for multi-dimensional BSDEs with jumps and applications to stochastic LQ control

报告人：许左权 教授 (香港理工大学)

时间：2025-04-30 星期三 15:30-16:30

地点：光华楼东主楼 2001

报告摘要：

We, for the first time, establish two comparison theorems for multi-dimensional backward stochastic differential equations with jumps. Our approach is novel and completely different from the existing ones for one-dimensional case. Using these and other delicate tools, we then construct solutions to coupled two-dimensional stochastic Riccati equation with jumps in both standard and singular cases. In the end, these results are applied to solve a cone-constrained stochastic linear-quadratic control problem and a mean-variance portfolio selection problem with jumps. Different from no jump problems, the optimal (relative) state processes may change their signs, which is of course due to the presence of jumps. This is a joint work with Ying Hu (Univ Rennes) and Xiaomin Shi (Shandong University of Finance and Economics).

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