



复旦大学数学科学学院 数学综合报告会

报告题目: Implementing Preventive Strategies and Risk Sharing in Risk Models

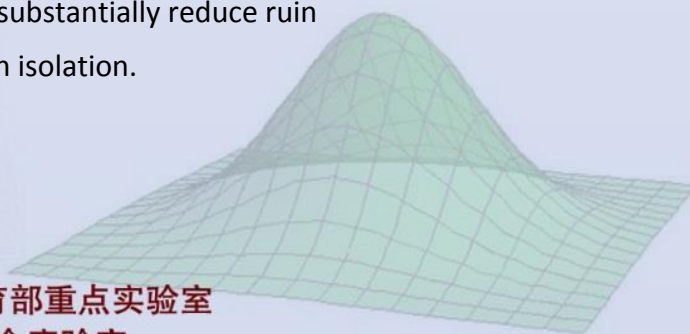
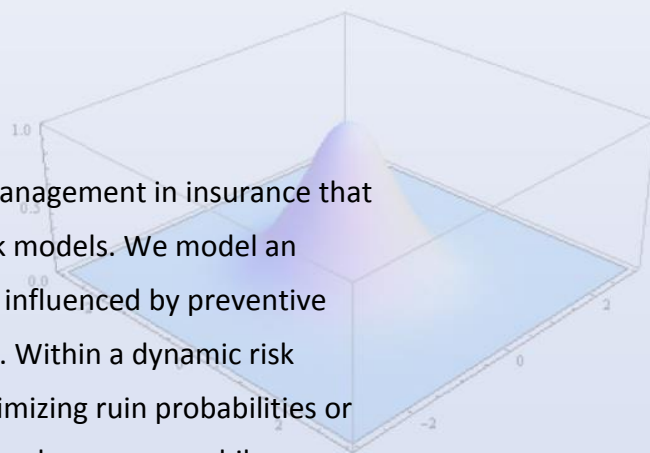
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时间: 2025-12-15 星期一 14:30-15:20

地点: 光华楼东主楼1801

报告摘要:

We develop an integrated framework for optimal risk management in insurance that considers preventive strategies and/or risk sharing in risk models. We model an insurer facing risks whose frequency and severity can be influenced by preventive efforts, as well as by exogenous risk-sharing instruments. Within a dynamic risk model, we formalize the insurer's problem as either minimizing ruin probabilities or maximizing a mean-variance criterion for the terminal surplus process, while accounting for the implementation costs of preventive measures and the cost of risk transfer. We derive analytical conditions characterizing the optimal prevention efforts and optimal risk-sharing structure, and we study how these choices depend on risk characteristics. Numerical illustrations based on classical risk models show that jointly optimizing prevention and risk sharing can substantially reduce ruin probabilities compared to treating these instruments in isolation.



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