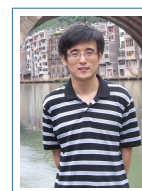# Xin Zhang

Curriculum Vitae

School of Mathematics
Southeast University, Nanjing
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Academic Qualifications

2006.09–2009.06	**Ph.D**, *School of Mathematical Sciences, Nankai University* Tianjin, China
2003.09–2006.06	**M.Sc.**, *School of Mathematical Sciences, Nankai University* Tianjin, China
1999.09–2003.06	**B.S.**, *Department of Mathematics, Shandong Normal University* Jinan, Shandong Province, China

Vocational Experience

2020.05–Present	**Professor**, *School of Mathematics, Southeast University* Nanjing, Jiangsu Province, China
2018.01–2018.02 2019.01–2019.03	**Research Fellow**, *Department of Applied Mathematics, The Hong Kong Polytechnic University* Hong Kong, China
2016.06–2016.09	**Postdoctoral Fellow**, *Department of Mathematics, University of Macau* Macau, China
2014.07–2020.04	**Associate Professor**, *School of Mathematics, Southeast University* Nanjing, Jiangsu Province, China
2014.02–2014.05	**Hon. Research Fellow**, *School of Physical Sciences, University of Liverpool* Liverpool, UK
2012.12–2014.06	**Associate Professor**, *School of Mathematical Sciences, Nankai University* Tianjin, China
2011.01–2012.01	**Postdoctoral Fellow**, *Faculty of Business and Economics, Macquarie University* Sydney, Australia
2009.07–2012.12	**Lecturer**, *School of Mathematical Sciences, Nankai University* Tianjin, China

Teaching

Undergraduate Courses

- **Advanced Mathematics(III):** Fall, 2010
- **Modern Actuarial Risk Theory:** Spring, 2010, 2012, 2013
- **Sample Techniques:** Fall, 2014, 2015, 2016
- **Probability:** Fall, 2015, 2016,2017,2018
- **Actuarial Mathematics:** Spring, 2015, 2016, 2017, 2018
- **Applied Stochastic Processes:** Spring, 2015, 2016

Postgraduate Courses

- **Actuarial Mathematics:** Spring, 2012, 2013
- **Applied Stochastic Processes:** Spring, 2012, 2013
- **Measure Theory and Probability:** Fall, 2012, 2013
- **Statistical Surveys:** Fall, 2015, 2016, 2017, 2018

Research Interests

- Risk Theory
- Stochastic Control in Insurance and Finance
- Regime-switching Models in Insurance and Finance
- Financial and Insurance Risks
- Asset Allocation in Finance and Insurance
- Pricing and Managing Risks of Structured Products in Finance and Insurance

Research Grants

2018.01–2021.12   **National Natural Science Foundation of China**, P. I.
Pricing and Stochastic Control Problems in Finance and Insurance
NSFC No.11771079, RMB 480,000

2014.01–2017.12   **National Natural Science Foundation of China**, P. I.
On the Stochastic Control Problems of Markov Regime-Switching Finance and Insurance Models
NSFC No.11371020, RMB 550,000

2011.01–2013.12   **National Natural Science Foundation of China**, P. I.
On the Ruin and Stochastic Control Problems of Markov Regime-Switching Models in Finance and Insurance
NSFC No.11001139, RMB 160,000

2011.01–2013.12   **Research Fund for the Doctoral Program of Higher Education**, P. I.
On the Ruin and Stochastic Control Problems of Markov-Modulated Models in Finance and Insurance
RFDP No. 20100031120002, RMB 36,000

2010.01–2012.12   **Fundamental Research Funds for the Central Universities**, P. I.
On the Stochastic Control and Game Problems in Finance and Insurance
RMB 120,000

2012.01–2015.12   **National Natural Science Foundation of China**, Participant
Stochastic Control Problems in Insurance Risk Theory
NSFC No. 11171164, RMB 520,000

2010.01–2012.12   **National Natural Science Foundation of China**, Participant
On the Stochastic Control Problems in Finance and Insurance under Fractional Brownian Motion Models
NSFC No. 10901086, RMB 160,000

2009.01–2011.12   **National Natural Science Foundation of China**, Participant
On the Stochastic Control and Game Problems in Finance and Insurance
NSFC No. 10871102, RMB 280,000

Publications

[1] **Xin Zhang**, Hui Meng, Jie Xiong, Yang Shen. Robust Optimal Investment and Reinsurance of an Insurer under Jump-Diffusion Models. *Mathematical Control and Related Fields*, 9(1):59-76, 2019.

[2] **Xin Zhang**, Zhongyang Sun, Jie Xiong. A general stochastic maximum principle for a Markov regime switching jump-diffusion model of mean-field type. *SIAM Journal on Control and Optimization*, 56(4):2563-2592, 2018.

[3] **Xin Zhang**, Jie Xiong, Yang Shen. Bond and option pricing for interest rate model with clustering effects. *Quantitative Finance*, 18(6):969-981, 2018.

[4] Zhongyang Sun, Junyi Guo, and **Xin Zhang**. Maximum Principle for Markov Regime-Switching ForwardBackward Stochastic Control System with Jumps and Relation to Dynamic Programming. *Journal of Optimization Theory and Applications*, 176(2):319-350, 2018.

[5] Qingbin Meng, **Xin Zhang**, Junna Bi. On optimal proportional reinsurance and investment in a hidden Markov financial market. *Acta Mathematicae Applicatae Sinica, English Series*, 33(1): 53-62, 2017.

[6] Zhongyang Sun, **Xin Zhang**, and Junyi Guo. A stochastic maximum principle for processes driven by G-Brownian motion and applications to finance. *Optimal Control Applications and Methods*, 38(6):934-948, 2017.

[7] Zhongyang Sun, Xiaoxiao Zheng, and **Xin Zhang**. Robust optimal investment and reinsurance of an insurer under variance premium principle and default risk. *Journal of Mathematical Analysis and Applications*, 446(2):1666–1686, 2017.

[8] **Xin Zhang**, Hui Meng, and Yan Zeng. Optimal investment and reinsurance strategies for insurers with generalized mean-variance premium principle and no-short selling. *Insurance Mathematics & Economics*, 67:125–132, 2016.

[9] Xiaoxiao Zheng, Zhongyang Sun, **Xin Zhang**. Optimal portfolio problems for an insurance company under default risk and model uncertainty. *Acta Mathematica Scientia Chinese Series*, 36A (2):362379, 2016.

[10] Yang Shen, **Xin Zhang**, and Tak Kuen Siu. Mean-variance portfolio selection under a constant elasticity of variance model. *Operations Research Letters*, 42(5):337–342, 2014.

[11] **Xin Zhang**. On optimal proportional reinsurance and investment in a partial markovian regime-switching economy. *Communications on Stochastic Analysis*, 7(3):481–492, 2013.

[12] Qingbin Meng, Zhendong Li, Menghai Wang, and **Xin Zhang**. Stochastic optimal control models for the insurance company with bankruptcy return. *Applied Mathematics & Information Sciences*, 7:273–282, 2013.

[13] **Xin Zhang**, Robert J. Elliott, and Tak Kuen Siu. A bayesian approach for optimal reinsurance and investment in a diffusion model. *Journal of Engineering Mathematics*, 76(1):195–206, 2012.

[14] **Xin Zhang**, Robert J. Elliott, and Tak Kuen Siu. A stochastic maximum principle for a markov regime-switching jump-diffusion model and its application to finance. *SIAM Journal on Control and Optimization*, 50(2):964–990, 2012.

[15] **Xin Zhang**, Robert J. Elliott, Tak Kuen Siu, and Junyi Guo. Markovian regime-switching market completion using additional markov jump assets. *IMA Journal of Management Mathematics*, 23(3):283–305, 2012.

[16] **Xin Zhang** and Tak Kuen Siu. On optimal proportional reinsurance and investment in a markovian regime-switching economy. *Acta Mathematica Sinica-English Series*, 28(1):67–82, 2012.

[17] **Xin Zhang** and Min Song. Optimization of risk policy and dividends with fixed transaction costs under interest rate. *Frontiers of Mathematics in China*, 7(4):795–811, 2012.

[18] Tongling Lv, Junyi Guo, and **Xin Zhang**. Some results on bivariate compound poisson risk model the distribution of the deficit at ruin. *Chinese Journal of Applied Probability and Statistics*, 27(5):449–453, 2011.

[19] Hui Meng and **Xin Zhang**. Optimal risk control for the excess of loss reinsurance policies. *Astin Bulletin*, 40(1):179–197, 2010.

[20] **Xin Zhang**, Tak Kuen Siu, and Qingbin Meng. Portfolio selection in the enlarged markovian regime-switching market. *SIAM Journal on Control and Optimization*, 48(5):3368–3388, 2010.

[21] Tong Ling Lv, Jun Yi Guo, and **Xin Zhang**. Ruin probabilities for a risk model with two classes of claims. *Acta Mathematica Sinica-English Series*, 26(9):1749–1760, 2010.

[22] **Xin Zhang** and Tak Kuen Siu. Optimal investment and reinsurance of an insurer with model uncertainty. *Insurance Mathematics & Economics*, 45(1):81–88, 2009.

[23] Qingbin Meng, **Xin Zhang**, and Junyi Guo. On a risk model with dependence between claim sizes and claim intervals. *Statistics & Probability Letters*, 78(13):1727–1734, 2008.

[24] **Xin Zhang**. On the ruin problem in a markov-modulated risk model. *Methodology and Computing in Applied Probability*, 10(2):225–238, 2008.

[25] Min Song, Rong Wu, and **Xin Zhang**. Total duration of negative surplus for the dual model. *Applied Stochastic Models in Business and Industry*, 24(6):591–600, 2008.

[26] **Xin Zhang**, Ming Zhou, and Junyi Guo. Optimal combinational quota-share and excess-of-loss reinsurance policies in a dynamic setting. *Applied Stochastic Models in Business and Industry*, 23(1):63–71, 2007.

Working Papers

[1] **Xin Zhang**, Jie Xiong, Shuaiqi Zhang. 2016. Optimal Reinsurance-Investment and Dividends Problem with Fixed Transaction Costs.

[2] **Xin Zhang**, Xun Li, Jie Xiong. 2018. Open-Loop and Closed-Loop Solvabilities for Stochastic Linear Quadratic Optimal Control Problems of Markov Regime Switching System.

Conferences and Invited Seminars

[1] Bond and option pricing for interest rate model with clustering effects. ***The Joint Optimization Conferences 2017 (JOC 2017)*** , Perth, Australia, December 4-10, 2017

[2] A Stochastic Maximum Principle for Processes Driven by G-Brownian Motion and Applications to Finance. **SIAM Conference on Control and Its Applications (CT17)** , Pittsburgh, USA, July 10-12, 2017

[3] Optimal proportional reinsurance and investment under mean-variance criterion in the regime switching jump diffusion model. **International Workshop on Risk Analysis, Ruin and Extremes**, Tianjin, P.R. China, July 14-16, 2014

[4] A Risk-Based Investment-Reinsurance Problem under a Markov Regime-Switching Jump-Diffusion Model. **Perspectives on Actuarial Risks in Talks of Young Researchers**, Ascona, Switzerland, Jan 26-Feb 1, 2013

[5] A Stochastic Maximum Principle for a Markov Regime-Switching Jump-Diffusion Model and its Application to Finance. **The 16th International Congress on Insurance: Mathematics and Economics**, Hongkong, June 28-30, 2012.

[6] Markowitz's Mean-Variance Portfolio Selection in the Markov-Switching Jump-Diffusion Market. **The 2010 International Conference on Insurance and Actuarial Science**, Chongqing, P.R. China, June 5-7, 2010.

[7] Portfolio Selection in the Enlarged Markovian Regime-Switching Market. **IMS-China International Conference on Statistics and Probability**, Weihai, Shandong Province, P.R. China, July 3–6, 2009

[8] Portfolio Optimization in Regime-Switching Market with Multiple Risky Assets. **The 12th International Congress on Insurance: Mathematics and Economics**, Dalian, P.R. China, July 16-18, 2008

Services

Anonymous referee for the Journals
- Insurance Mathematics and Economics
- Journal of Optimization Theory and Applications
- Journal of Applied Mathematics and Computing
- Optimal Control, Applications and Methods

Professional Affiliations
- Reviewer of Mathematical Review (MR)