# Dong LI

**Contact Information**

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**Research Interests**

Financial econometrics, Nonlinear time series with applications,
Social network and big data.

**Working experience**

Associate Professor, Tsinghua University, 01/2017- present.

Assistant Professor, Tsinghua University, 09/2013- 12/2016.

**Education**

Ph.D., Hong Kong University of Science and Technology, 12/2010

- Major in Statistics
- Thesis Topic: *Statistical Inference for Some Threshold Models*
- Adviser: Professor Shiqing Ling

M.S., Academy of Mathematics and Systems Science, CAS, 07/2005

B.S., Qufu Normal University, 07/2002

**Research Experience**

Post-doc Fellow 02/2011 - 07/2011
Department of Mathematics, HKUST

Post-doc Fellow 08/2011 - 02/2013
Department of Statistics & Actuarial Science , University of Iowa

**Visit**

Research Assistant 09/2005 - 05/2006
Department of Mathematics, HKUST

Visiting scholar 05/2012
Department of Statistics, London School of Economics and Political Science

Visiting scholar 02/2013 - 08/2013
Department of Mathematics, HKUST

**Publications**

**Li, D.**, Guo, S. and Zhu, K. (2017). A double AR Model without intercept: an alternative to modeling nonstationarity and heteroscedasticity. *Econometric Reviews.* (accepted)

Liu, F., **Li, D.** and Kang, X.M. (2017). Sample path properties of an explosive double autoregressive model. *Econometric Reviews.* (accepted)

**Li, D.** and Tong, H. (2016). Nested sub-sample search algorithm for estimation of threshold models. *Statistica Sinica.* **26**, 1543–1554.

**Li, D.**, Ling, S. and Zhang, R. M. (2016). On a threshold double autoregressive model. *Journal of Business & Economic Statistics* **34**, 68–80.

**Li, D.**, Ling, S. and Zakoïan, J-M.(2015). Asymptotic inference in multiple-threshold double autoregressive models. *Journal of Econometrics* **189**, 415–427.

**Li, D.**, Li, M. and Wu, W. (2014). On dynamics of volatilities in nonstationary GARCH models. *Statistics & Probability Letters* **94**, 86–90.

Chen, M., **Li, D.** and Ling, S. (2014). Nonstationarity and quasi-maximum likelihood estimation on a double autoregressive model. *Journal of Time Series Analysis* **35**, 189–202.

Chan, K.S., **Li, D.**, Ling, S. and Tong, H. (2014). On conditionally heteroscedastic AR models with thresholds. *Statistica Sinica* **24**, 625–652.

**Li, D.** (2014). Weak convergence of the sequential empirical processes of residuals in TAR models. *Science China: Mathematics* **57**, 173–180.

**Li, D.**, Chan, K.S. and Schiling, K.E. (2013). Nitrate concentration trends in Iowa's rivers, 1998 to 2012: What challenges await nutrient reduction initiatives? *Journal of Environmental Quality*, **42** 1822–1828.

**Li, D.**, Ling, S. and Li, W.K. (2013). Asymptotic theory on the least squares estimation of threshold moving-average models. *Econometric Theory*, **29** 482-516.

Wu,W.Q., **Li, D.**, Pan, S. and Chen, M. (2013). Three-regime mean reversion, TAR and its applications. *Systems Engineering - Theory & Practice*, **33** 901-909.

**Li, D.** and Ling, S. (2012). On the least squares estimation of multiple-regime threshold autoregressive models. *Journal of Econometrics*, **167** 240-253.

**Li, D.** (2012). A note on moving-average models with feedback. *Journal of Time Series Analysis*, **33** 873-879.

**Li, D.**, Ling, S. and Tong, H. (2012). On moving-average models with feedback. *Bernoulli*, **18** 735-745.

**Li, D.**, Li, W.K. and Ling, S. (2011). On the least squares estimation of threshold ARMA models. *Statistics and its Interface*, **4** 183-196.

Ling, S. and **Li, D.** (2008). Asymptotic inference for a nonstationary double AR(1) model. *Biometrika*, **95** 257-263.

Ling, S., Tong, H. and **Li, D.** (2007). Ergodicity and invertibility of threshold moving-average models. *Bernoulli*, **13** 161-168.

## Submitted papers

**Li, D.** and Wu, W.Q. (2016). Renorming volatilities in a family of GARCH models.

**Li, D.**, Ling, S. and Zhu, K. (2016). ZD-GARCH model: a new way to study heteroscedasticity.

**Li, D.** (2016). Smooth transition moving-average models: estimation and testing.

Guo, S., **Li, D.** and Li, M. (2016). Robust inference in a double AR model.

**Li, D.** and Zhu, K. (2016). A new ZD-GJR model for asymmetric and heavy-tailed nonstationarity.

**Li, D.**, Ling, S. and Yang, G. R. (2016). Bridging compound Poisson processes and Brownian motions with applications to threshold models.

Chow, J., **Li, D.**, Pan, R. and Wang, H.S. (2016). Network GARCH model.

## Manuscripts

Asymptotic theory for the quasi-maximum likelihood estimation in AR models with nonstationary GARCH errors.

Smooth bootstrap for TMA models.

Least squares estimation of continuous TARMA models.

Maximum likelihood estimation for $\alpha$-stable TAR models.

Estimation in closed-loop threshold autoregressive models.

Asymptotic theory for the QMLE in GARCH-M models.

Asymptotic inference in GJR-GARCH-X models with stationary and nonstationary covariates.

On the LSE of partially continuous TAR models

## Teaching

**Courses taught**:

- Multivariate Statistical Analysis (2014,2015/Spring)(Graduate level)
- Advanced Mathematical Statistics (2014, 2015/Fall)(Graduate level)
- Cases and Statistical Studies (2014, 2015/Fall, with other 4 instructors)(Graduate level)
- Probability (2014/Summer)(Undergraduate level)
- Probability and Statistics (2015/Summer)(Undergraduate level)
- Elementary Probability (2016/Fall)(Undergraduate level for minor degree)
- Advanced Probability I (2016/Fall)(Graduate level)
- Time Series Analysis (2017/Spring)(Graduate level)
- Applied Time Series Analysis (2017/Spring)(Undergraduate level)

## Service

- *Council member of Beijing Applied Statistic Association* (2015-)

## Fund

- NSFC (No. 11401337, PI), RMB¥220,000, Time: 01/2015 - 12/2017.
- NSFC (No. 11471183, Participant), Time: 01/2015 - 12/2018.
- NSFC (No. 11571348, Principal Participant), RMB¥30,000, Time: 01/2016 - 12/2019.

## Organizing Conference

- Co-organizer, the international conference on Time Series Econometrics, Dec. 18-20, 2015. (with Shiqing Ling and Chuanzhong Chen)
- Co-organizer, 2016 Tsinghua Symposium on Statistics and Data Science for Young Scholars, Dec. 9-11, 2016. (with Ke Deng and Lin Hou)
- Organizer, Mini workshop on Big Data and Internet Finance, Dec. 18, 2106.

## Journal Reviewing

- *Applied Stochastic Models in Business and Industry*
- *Annals of Statistics*
- *Biometrika*
- *Colombian Journal of Statistics*
- *Communications in Statistics - Simulation and Computation*
- *Computational Statistics & Data Analysis*
- *European Journal of Industrial Engineering*
- *Econometric Theory*
- *Journal of Econometrics*
- *Journal of the Korean Statistical Society*
- *Journal of Risk and Financial Management*
- *Metrika*
- *Statistica Sinica*

- *Stochastic Environmental Research and Risk Assessment*
- *Statistics & Probability Letters*
- *Test*

(Invited) Talks in Conferences and Seminars

*The 2016 Symposium on Modern Statistics at Xiamen University, 24-25/12/2016.*

*Statistics with Applications for Young Scholars at Capital Normal University, Beijing, 2-4/12/2016.*

*Symposium on Statistics for Young Scholars at Nankai University, Tianjin, 11-13/11/2016.*

*The Third Guanghua Time Series Forum, Peking University at Xi'an, 1-5/08/2016.*

*The Third Taihu International Statistics Forum, Shanghai, 9-11/07/2016.*

*The 2015 Symposium on Modern Statistics at Xiamen University, 25-27/12/2015.*

*The international workshop on Time Series Econometrics at Tsinghua-Sanya Mathematical Forum, 18-20/12/2015.*

*The Second Guanghua Time Series Forum, Peking University at Xi'an, 2-7/08/2015.*

*The 5th IMA-China International Conference on Statistics and Probability, Yunnan University, 1-3/07/2015.*

*2015 Tsinghua Summer Workshop on Modern Statistics, Tsinghua University, 22-26/06/2015.*

*The First Colloquium on Statistical Science For Young Researchers, SJTU, 19-21/06/2015.*

*Workshop on applied statistics, Jilin University, 9-12/01/2015.*

*Big Data: Opportunities, Challenges and Innovations, Tsinghua Sanya International Mathematics Forum, 27-30/12/2014.*

*The First Guanghua Time Series Forum at Peking University, 18-22/08/2014.*

*The 7th Financial Engineering and Risk Management International Symposium, 27-28/06/2014, Central University of Finance and Economics, China.*

*The workshop on Chinese statistics, 22-24/11/2013, Chinese Academy of Sciences.*

*An International Conference in Honour of Professor W.K. Li at HKUST—Frontiers of Time Series Analysis and Related Fields, 26-27/07/2013.*

*National University of Singapore, 29/02/2012.*

*Business School, Monash University, Australia, 25/02/2011.*

*Recent Advances in Nonlinear Time Series Analysis, the Institute of Mathematical Science, National University of Singapore, 7-18/02/2011.*

*School of Business, Remin University of China, 29/06/2010.*

Proceedings of the Sixth Chinese Symposium on *Limit Theory in Probability And Large Sample Theory in Statistics*, Luoyang, Henan Province, China, 7-9/11/2009.