

CURRICULUM VITÆ

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General Information

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Education

1999	H.d.R.	Statistics	Université de Paris 1, Paris
1990	Ph. D.	Applied Mathematics	Université de Paris-Sud, Orsay
1986	D.E.A.	Statistics	Université de Paris-Sud, Orsay
1984	Bs.	Mathematics	Université de Paris-Sud, Orsay

Professional experience

2015 – Professor of Statistics, The University of Hong Kong
2011 – 2014 Associate Professor of Statistics, The University of Hong Kong
2009 – 2010 Professor in Applied Mathematics (first class), Université de Rennes 1
2000 – 2008 Professor in Applied Mathematics (2nd class), Université de Rennes 1
2003 – 2004 Senior Research Fellow, INRIA Bretagne Atlantique
1990 – 1999 *Maître de Conférence* of Mathematics, Université de Paris 1
1989 – 1995 Research & Development, SUDIMAGE
1989 – 1990 Postdoctoral Research Fellow, École Normale Supérieure, Paris
1986 – 1989 Research assistant, Department of Mathematics, Université de Paris-Sud, Orsay

Honors and awards

- Council Member (2019 –), The Bernoulli Society for Mathematical Statistics and Probability.
- Fellow, Institute of Mathematical Statistics (IMS)
- Elected member of the International Statistical Institute (ISI)
- Board of Directors, Société des Mathématiques Appliquées et Industrielles (SMAI/MAS), 2006-2010

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1. Research and scholarship

1.1. Editorship

1. 2019- : Associate Editor, *Journal of Multivariate Analysis*.
2. 2018- : Associate Editor, *Computational Statistics and Data Analysis*.
3. 2013-2015: Associate Editor, *Bernoulli*, official journal of the *Bernoulli Society for Mathematical Statistics and Probability*. Impact factor: 1.126 (JCR 2012).
4. 06/2011- : Associate Editor, *Random Matrices: Theory and Applications*, World Scientific, Singapore
5. 06/2012- : Associate Editor, *ESAIM: Proceedings*, EDP Sciences, Paris.

1.2. Research Grants (since 2010 - my appointment at HKU)

1. (PI) RGC General Research Fund 17308920 (2020/2021), "Spectral analysis of large distance covariance matrices and applications", HK\$599,861
2. (PI) RGC General Research Fund 17307319 (2019/2020), " Large-dimensional limits of eigenvalues of a generalized Wishart process with application to multivariate volatility modeling", HK\$753,667
3. (PI) RGC General Research Fund 17306918 (2018/2019), "Central limit theorems for linear statistics of a general Wigner matrix with heterogeneous fourth moments and application", HK\$456,452
4. (PI) RGC General Research Fund 17332416 (2016/2017), "Heavy-tailed large sample covariance matrices and applications", HK\$488,501
5. (PI) RGC General Research Fund 17305814 (2014/2015), "Test of dependence between a large set and a small set of variables", HK\$351,756
6. (PI) RGC PROCORE – France/Hong Kong Joint Research Scheme F-HK710/13C (2013/2014), Workshop on "Random Matrices and Their Applications", HK\$142,200
7. (PI) RGC General Research Fund 705413P (2013/2014), "Inference for high-dimensional factor models", HK\$592,987
8. (PI) French CNRS Research Council and Chinese NSF Joint Grant for Summer School (2011), "Random Matrix Theory and Applications in High-dimensional Statistics", €70,000.

1.3. Organization of Conferences/workshops/summer schools (since 2000)

Organizer/Co-organizer:

- International events:

1. *Workshop on Random Matrices and Complex Data Analysis*, December 10-12, 2019, Shanghai University of Finance and Economics.
2. *The 2019 Workshop on Probability and Information Theory (WPI 2019)*, August 19-22, 2019, The University of Hong Kong.
3. PROCORE – France/Hong Kong Joint Research Scheme 2013/2014 (RGC Project No.: F-HK710/13C), Workshop on "Random Matrices and Their Applications", January 6-9 2015, The University of Hong Kong.
4. *French-Chinese Summer Institute on Random matrix theory and its applications to high-dimensional statistics*, July 2011, Changchun, China.

5. *2008 Summer Courses on Machine Learning, Statistics and Computer Vision*, June 30-July 11 2008, Lotus Hill Institute, E'Zhou, China.

- *National/regional events:*

1. *Workshop on Random Matrices*, June 16, 2017, Institute of Mathematical Research, The University of Hong Kong.
2. *High-dimensional Statistics with Random Matrix Theory*, October 19, 2011, The University of Hong Kong.
3. *Journées MAS de la SMAI*. August 25-27 2008, Rennes.
4. *Random Matrices and Wireless Communications (Séminaire Parisien de Statistique)*. May 26 2008, Institut Henri Poincaré, Paris.
5. *Journées de la STATistique Rennaise JSTAR'07 : Statistiques Spatiale et Spatio-temporelle*. October 25-26 2007, Université de Rennes 1.
6. *Journées Images et Modélisations Mathématiques*. December 7-8 2006, Université de Rennes 1.
7. *Journées de la STATistique Rennaise JSTR'04*, October 2004, Rennes
8. *Colloque en l'honneur de Xavier GUYON*. May 2003, Paris

Scientific Program Committee :

1. The Ninth International Workshop On Applied Probability (IWAP'2018), Budapest, 18-22 June 2018.
2. The 2nd International Conference on Econometrics and Statistics (EcoSta 2018). Hong Kong, 19-21 June 2018.
3. The 4th Institute of Mathematical Statistics Asia Pacific Rim Meeting. June 27-30 2016, Hong Kong

Session Organizer in International Conferences:

1. Invited session "Recent advances in random matrix theory". The Ninth International Workshop On Applied Probability (IWAP'2018), Budapest, 18-22 June 2018.
2. Invited session "Large sample covariance matrices and high-dimensional statistics". *31th European Meeting of Statisticians*, University of Helsinki, JULY 24-28, 2017
3. Invited session "Random matrices and high-dimensional statistics" (IP26) *The 4th Institute of Mathematical Statistics Asia Pacific Rim Meeting*, The Chinese University of Hong Kong, June 27-30, 2016
4. Topic-contributed session "Large sample covariance matrices and high-dimensional statistics". *30th European Meeting of Statisticians*, VU University Amsterdam, Netherlands, July 6-10, 2015
5. Topic-contributed Session "High-dimensional statistics and random matrix theory". *29th European Meeting of Statisticians*, Budapest, Hungary, July 20-25, 2013

1.4. Creation of the Hong Kong Probability Seminar

With Dr. Pierre Nolin (City University of Hong Kong), we created in 2017 the *Hong Kong Probability Seminar* (<https://sites.google.com/site/hkprobability/>). Mathematicians

working in probability theory in Hong Kong are quite dispersed in several universities, and they have had noticeable difficulty to meet regularly for academic discussions. The Hong Kong Probability Seminar aims at filling this gap. Each month the half-day seminar features two talks by experts in probability theory and related fields. During the two years 2017-2018 and 2018-2019, the seminar featured a total of 28 invited speakers. The organization committee comprises members from The University of Hong Kong, City University of Hong Kong, The Chinese University of Hong Kong and The Hong Kong University of Science and Technology.

1.5. *Invited short-courses*

- An introduction to large sample covariance matrices and their applications. *CIMPA School on Mathematical Methods for Data Sciences*, July 19-30, 2021, African Institute for Mathematical Sciences, Cape Town, South Africa.
- Large random matrices and applications to high-dimensional statistics. *Summer Research courses*, July 2-10, 2018, Institute of Statistics and Big Data, Renming University, Beijing

1.6. *Keynote and Invited Talks in International Conferences/Workshops (since 2010)*

1. Invited speaker, *Mathematical Methods of Modern Statistics 2*, June 15-19, 2020, CIRM (Centre International de Rencontres Mathématiques), Luminy, France
2. Invited speaker, *The 11th Tartu Conference on Multivariate Statistics* June 16-19 2020, Tartu, Estonia
3. Keynote talk "Recent advances in analysis of large sample covariance matrices and applications". *International Symposium on Theories and Methodologies for Large Complex Data*, November 21-23, 2019, University of Tsukuba
4. Invited speaker (1 week), Identifying the number of factors from singular values of a large sample auto-covariance matrix. *Seminar Series in Finance and Statistics*, The Australian National University (College of Business and Economics), July 2019.
5. Large sample covariance matrices and their application to high-dimensional statistics. *Random Matrices and Their Applications Workshop*, Kyoto University, May 2018
6. On structure testing for component covariance matrices of a high-dimensional mixture. *Joint Statistical Meeting 2017*, Baltimore, July 30 - August 4, 2017.
7. Eigenvalues of sample covariance matrix from a high-dimensional mixture. *2016 International Conference on Data Science*, Fudan University, December 16-19, 2016
8. Identifying the number of factors from singular values of a large sample auto-covariance matrix. *2016 Annual Meeting of Statistical Society of Canada*, St. Catharines, Ontario, May 29 - June 1 2016.
9. On estimation of the noise variance in high-dimensional probabilistic principal component analysis. *8th International Conference of the ERCIM WG on CMStatistics 2015*, December 6-10, London
10. Identifying the number of factors from singular values of a large sample auto-covariance matrix. *Complex Systems in Time Series Conference*, London School of Economics and Political Science, 4 and 5 December 2015
11. On estimation of the noise variance in high-dimensional probabilistic principal component analysis. *2015 IMS-China International Conference on Statistics and Probability*, Kun-

- ming, China, July 1-4, 2015
12. On estimation of the noise variance in high-dimensional probabilistic PCA. *2014 IEEE Workshop on Statistical Signal Processing*, Gold Coast, Australia, 29 June - 2 July 2014
 13. Identifying the number of factors from singular values of a large sample auto-covariance matrix. *30th European Meeting of Statisticians*, Amsterdam, Netherlands, July 6-10, 2015
 14. The problem of centering in the CLT for linear spectral statistics of a large sample covariance matrix. *Fourth Singapore Conference on Statistical Science*, National University of Singapore, 6 & 7 February 2014.
 15. On the sphericity test with large-dimensional observations. *Joint Meeting of the IASC Satellite Conference for the 59th ISI WSC and the 8th Conference of the Asian Regional Section of the IASC*, Yonsei University, Seoul, August 22-23 2013
 16. Inference for high-dimensional factor models. *International Workshop on the Perspectives on High-dimensional Data Analysis III*, University of British Columbia, May 23-25, 2013
 17. Inference for high-dimensional factor models. *29th European Meeting of Statisticians*, Budapest, Hungary, July 20-25, 2013
 18. Statistical inference in a spiked population model. *Random matrices and their applications*, Telecom-ParisTech, Paris, October 2012
 19. On estimation of the number of factors from large-dimensional data. *The 2nd IMS-Asia Pacific Rim Meeting*, Tsukuba, July 2012
 20. Short-course on large-dimensional statistics. *Random Matrix Theory and its Applications to Statistics and Wireless Communications II*, Singapore, June 2012.
 21. On estimation of population spectral density from large-dimensional covariance matrices. *French-Chinese Summer Institute on Random matrix theory and its applications to high-dimensional statistics*. July 2011, Changchun, China
 22. High-dimensional statistical problems related to sample covariance matrices. *Workshop in Probability and Statistics*, Zhejiang University, July 2011
 23. Testing on high-dimensional covariance matrices. *International Conference on Statistics and Society*, Beijing, July 2010.

1.7. Refereeing

For many journals including

- Annals of Statistics
- Annals of Probability
- Journal of the American Statistical Association
- Journal of the Royal Statistical Society (Series B)
- Electronical Journal of Probability
- Bernoulli
- Journal of Multivariate Analysis
- Test
- Journal of Applied Probability
- Advances in Applied Probability
- SIAM Journal on Optimization
- Computational Statistics and Data Analysis
- Journal of Statistical Planning and Inference
- Statistics and Probability Letters

- Journal of Korean Statistical Society
- Statistical Papers
- Metrika
- Random Matrices: Theory and Applications
- Journal of Computational and Graphical Statistics
- Pattern Recognition Letters
- Journal of Probability and Statistics

2. Teaching and Learning

2.1. Curriculum development

In HKU:

1. Principal investigator for the design and set-up of an upcoming new HKU-wide undergraduate course "Essential skills for undergraduates: Foundation of Data Science". The project is funded by an HKU Teaching Development and Language Enhancement Grant (TDLEG 2019-2022). It is an important part of a vast and ambitious initiative in Teaching and Learning developed at HKU. The course will start with its first cohort in September 2020.
2. Creation of a new PG course "STAT6014 Advanced Statistical Modelling" (Spring 2011) and a new Master course "STAT6016 Spatial Data Analysis" (Spring 2014): the set up of these two new courses has been highly time and energy consuming. But the outcomes seem very positive, as attested by the SETL scores of these two courses: in the last survey of Semester 2, 2013-14, these figures are 81.1 and 85.7, respectively, which are well above the Department average 73.1.
Another indicator is that over the years, STAT6014 has become the *most enrolled* course among all courses offered in the curriculum of Master of Statistics (56 enrolled in 2013-14).

In Université de Rennes 1: I would like to highlight the following two contributions.

1. **Introduction of a new master curriculum in 2008:** Being Director of a Master program in Statistics in 2007, I had the idea to contact the Faculty of Economic Science where a close program in Quantitative Econometrics exists by proposing to build a common Master Curriculum across the Departments. The advantage of this proposal is two-fold: on one side we can share our respective strength in mathematics, statistics and econometrics; on the other side, joint forces from both departments will make the new program more attractive to prospective students and larger applications and enrolments are then to be expected.
We worked hard in 2007 to obtain the official agreement from the French Ministry of Education. The new Master curriculum with major Statistics and Econometrics was launched in September 2008. It has become one of the largest Master program in Statistics in Western France in term of student enrolment (see the attached Document A).
2. **Introduction of a cooperation program with a Chinese University:** During the recent years, enrolments in scientific curriculum are generally decreasing in French Universities. The Department of Mathematics in Rennes 1 is facing the same difficulties. In 2009, I proposed to the Department to establish a official agreement with the Institute

of Mathematics and Statistics of Zhejiang Gongshang University for annual recruitment of about 10 students from Zhejiang. After several months of preparation, the formal agreement was signed by both universities. This program started in 2010 for a first period of four years.

2.2. Postgraduate supervision

Graduated M. Phil students: I do not mention numerous M.Phil students I supervised in France. At HKU, I had one M. Phil student, Mr. Hualong YANG who completed his degree in July 2013.

Graduated Ph. D students at the Université de Rennes 1:

1. Benoîte DE SAPORTA, completed in October 2004 with title: *Study of the Stationary Solution of the Equation $Y_{n+1} = a_n Y_n + b_n$ with Random Coefficients*. **Full professor**, University of Montpellier, France
2. Gwënaelle PIRIOU (joint with Patrick BOUTHEMY), completed in December 2005 with title: *Motion Analysis and Modeling for video sequences*. Assistant Professor (Maître de Conférence, second class), Université de Bretagne-Sud, France.
3. Maher KACHOUR, completed in December 2009 with title *On a New Class of Models for Integer-valued Time Series*. Associate Professor, ESSCA School of Management, France.
4. Jiaqi CHEN, completed in September 2009 with title *On Estimation of Population Spectral distribution from High-dimensional Covariance Matrices*. Associate professor, Harbin Institute of Technology, China
5. Nicolas RAILLARD (joint with Bertrand CHAPRON), completed in December 2011 with title *Extreme Values of Spatial-temporal Processes for Modeling of Oceanographic Data*. Research Scientist, IFREMER, France
6. Damien PASSEMIER, completed in December 2012 with title *Inférence statistique dans un modèle à variances isolées de grande dimension* (Statistic Inference in a Spiked Population Model). Data Scientist.

Graduated Ph. D students at The University of Hong Kong:

1. Zhaoyuan LI, completed in August 2016 with title *Some Contributions to High-dimensional Data Analysis*. Assistant Professor, Chinese University of Hong Kong - Shenzhen.
2. Zeng LI, completed in April 2017 with title *Spectral Analysis of Large Auto-Covariance Matrices With Application to High Dimensional Time Series Analysis*. Assistant Professor, Southern University of Science and Technology of China.
3. Keren SHEN (co-supervisor), completed in August 2017 with title *Modeling of High-dimensional Realized Volatility Matrices with Financial Applications*. Quantitative Analyst, Deutsche Bank.

2.3. Taught courses

A short list of major courses I have taught at HKU (since my appointment in 2010):

- Advanced Probability (PG)

- Advanced statistical modeling (Master)
- Spatial data analysis (Master)
- Research methods in statistics (PG/UG)
- Stochastic models (final year, UG)

Some courses I have taught in two French universities:

- Probabilistic models and their applications (final year, UG)
- Markov chain Monte-Carlo (Master)
- Nonlinear time series and forecasting (Master)
- Mathematical statistics (final year UG)
- Software for statistical computing (Master)
- Multivariate data analysis (Master)

I should mention that there are *no* teaching awards exist in French universities.

3. Service (since 2000)

This section **Service** describes my activities since 2000 when I started a professorship in statistics at the Université de Rennes 1, France, followed by my appointment at HKU.

3.1. *Management for professional societies and external universities*

1. Elected member of the Council of the *Bernoulli Society for Mathematical Statistics and Probability* (since 2019).
2. Elected member of the Board of Directors of the SMAI Society (section MAS) from 2006 to 2010: SMAI¹ (*Société des Mathématiques Appliquées et Industrielles*) together with SMF (*Société des Mathématiques de France*) are the two main professional organizations in mathematics in France.
3. Invited external member of the Standing Hiring Committees in Applied Mathematics², for the following French universities:
 - (a) Université de Haute-Bretagne, Rennes (2000-2005);
 - (b) Université de Bretagne-Sud, Vannes (2004-2006);
 - (c) Université de Bordeaux 4, Bordeaux (2010).

3.2. *University and faculty service at HKU*

1. Co-Director of BASC in Applied Artificial Intelligence (since 2019).
2. Member of the Science Faculty Human Resource Committee (2019-2022).
3. Creation and management of a five-year cooperation between The National School for Statistics and Information Analysis (ENSAI), France, and the Science Faculty (HKU) that comprises, yearly,
 - a two-week learning programme organized by ENSAI in Rennes, France for a maximum of 20 HKU students;

¹<http://smail.emath.fr>

²In French, *Commission de spécialiste - Comité de sélection, section 26.*

- exchange study for a maximum of 5 ENSAI students to HKU.

This cooperation has started since the academic year 2016-2017.

4. Nominated member, Board of the Faculty of Arts (2013-2016)
5. Board of the Faculty of Science;
6. Higher Science Degrees Committee (Faculty of Science, 2016-2017)

3.3. *Departmental service*

In HKU:

1. Member of the Management Committee;
2. Member of the DRPC Committee;
3. Master of Statistics Panel;
4. Curriculum Sub-Committee;
5. Chair of the Departmental Seminar (2013-2016).

In Université de Rennes 1:

1. During 2006-2008, Director of the Master program in Statistics.
2. Since 2008, Co-director of a Master program in Statistics and Econometrics, a joint program between the Department of Mathematics and the Faculty of Economic Sciences in the Université de Rennes 1.
Indeed I am one of the founding directors of this new master program (see the attached Document A).
3. In order to enlarge the enrolment of students into the two master programs of the Department, Master in Mathematics and Master in Statistics and Econometrics, I proposed, in 2009, to the Department to establish a official agreement with the Institute of Mathematics and Statistics of Zhejiang Gongshang University for annual recruitment of about 10 students from Zhejiang. After several months of preparation, the formal agreement was signed by both universities (see the attached Document B).
This program started in 2010 and I chaired the first recruitment committee in 2010.
4. Member of the Standing Search Committees in Mathematics, 2002-2010.
5. Chair of the Committee for Computer Labs, 2006-2010. The main goal of the committee was to conduct plans and projects regarding all aspects of the computing labs: e.g. set-up and maintenance of the rooms; software buying and maintenance.

3.4. *Invited reviews/examinations of Ph. D. thesis*

In Hong Kong:

1. *External examiner*, Ph. D thesis of Nicolas AUGUIN, HKUST, August 2019.
2. *External examiner*, Ph. D thesis of Yicheng ZENG, HKBU, August 2019.
3. *External examiner*, M. Phil. thesis of Yin LI, City U, Juin 2019.
4. *External examiner*, Ph. D thesis of Liuxia YANG, HKUST, August 2018.
5. *External examiner*, Ph. D thesis of Xinxin YANG, HKUST, August 2017.
6. *External examiner*, Ph. D thesis of Kan ZHANG, HKUST, September 2012.
7. *Examiner* for Ph. D thesis of following students in HKU: Patrick Fo Chun NG (May 2014), Xueying ZHENG (August 2013), Yang LI (August 2012), Yuan LI (September

2012), Chao WANG (May 2012), Yong ZHANG (June 2011), Mehdi SOULEYMANI (September 2011).

Outside Hong Kong

1. *External examiner*, Ph. D thesis of Xiao HAN, Nanyang Technology University, June 2016.
2. *External examiner*, Ph. D thesis of Min CHAO, University of Macau, May 2016.
3. *External examiner*, Ph. D thesis of Chen WANG, National University of Singapore, February 2014.
4. *External examiner*, Ph. D thesis of Ningning XIA, National University of Singapore, March 2013.
5. *External examiner*, Ph. D thesis of Xiaoying WANG, National University of Singapore, September 2009.
6. *External examiner*, Ph. D thesis of Lixin ZHANG, National University of Singapore, November 2006;

In France:

In this section I use the term *Reviewer* to distinguish a new type of duties for thesis examination in France. A *Reviewer* of a thesis is responsible for a *detailed report on all the contributions* reported in the thesis. Reports from reviewers follow a thesis holder throughout his scholar career in the sense that they serve as primary recommendation letters for all his subsequent applications to a academic position.

1. *Reviewer*, Ph. D thesis of Gia-Thuy PHAM, Université de Marne-Vallée, February 2017.
2. *Reviewer*, Ph. D thesis of Pascal VALLET, Université de Marne-Vallée, October 2011.
3. *Reviewer*, Ph. D thesis of Vu Duc TRAN, Université de Bretagne-Sud, July 2009.
4. *Examiner*, Ph. D. thesis of Hamdi RAISSI, Université de Lille 3, December 2007.
5. *Examiner*, Ph. D thesis of Madalina OLTEANU, Université de Paris I, December 2006.
6. *Reviewer*, Ph. D thesis of Samuel SOUBEYRAND, INRA Avignon and Université de Montpellier 2, December 2005.
7. Member, H.d.R. (highest university degree) of James LEDOUX, Université de Rennes 1, December 2005.
8. Member, Ph. D. thesis of Agnès GRIMAUD, Université de Paris VII and INRA Jouy-en-Josas, December 2005.
9. Member, H.d.R. defense of Denys POMMERET, ENSAI eand Université de Rennes 2, November 2004.
10. Member, Ph. D. of Riadh KALLEL, Université de Paris I, January 2003.

4. Major publications

- [M1] Zeng Li, Fang Han and Jianfeng Yao, 2020. Asymptotic joint distribution of extreme eigenvalues and trace of large sample covariance matrix in a generalized spiked population model. *The Annals of Statistics* **48** (6)(December), 3138-3160
- [M2] Jian Song, Jianfeng Yao and Wangjun Yuan, 2020. High-dimensional limits of eigenvalue distributions for general Wishart process. *The Annals of Applied Probability* **30** (4)(August), 1642-1668
- [M3] Z. Li, C. Lam, J. Yao and Q. Yao, 2019. On testing for high-dimensional white noise. *The Annals of Statistics*, **47(6)** (December 2019), 3382-3412
- [M4] Weiming Li and Jianfeng Yao 2018. On structure testing for component covariance matrices of a high-dimensional mixture. *Journal of the Royal Statistical Society Series B (Statistical Methodology)* **80** (Part 2) (February), 293-318
- [M5] Q. Wang and J. Yao, 2017. Extreme eigenvalues of large-dimensional spiked Fisher matrices with application. *The Annals of Statistics* **45(1)** (February), 415-460.
- [M6] Z. Li, Q. Wang and J. Yao, 2017. Identifying the number of factors from singular values of a large sample auto-covariance matrix. *The Annals of Statistics* 02/2017; **45(1)** (February), 257-288
- [M7] Qinwen Wang and Jianfeng Yao, 2016. Moment approach for singular values distribution of a large auto-covariance matrix. *Annals de l'Institut Henri Poincaré - Probabilités et Statistiques* **52** (4), 1641-1666
- [M8] D. Passemier, Zh. Li and J. Yao, 2017. On estimation of the noise variance in high-dimensional probabilistic principal component analysis. *Journal of the Royal Statistical Society Series B (Statistical Methodology)* **79(1)** (January), 51-67.
- [M9] S. Zheng, Z. D. Bai and J. Yao, 2017. CLT for eigenvalue statistics of high-dimensional general Fisher matrices with applications. *Bernoulli* **23(2)** (April), 1130-1178.
- [M10] S. Zheng, Z. D. Bai and J. Yao, 2015. Substitution principle for CLT of linear spectral statistics of high-dimensional sample covariance matrices with applications to hypothesis testing. *The Annals of Statistics* **43** (2), 546-591
- [M11] Q. Wang, Z. Su and J. Yao, 2014. Joint CLT for several random sesquilinear forms with applications to large-dimensional spiked population models. *Electron. J. Probab.* **19** (103), 1-28.
- [M12] C. Wang, H. Liu, J.F. Yao, R. Davis and W. K. Li, 2014. Self-excited Threshold Poisson Autoregression. In Press: *J. Amer. Statist. Assoc.* **109** (506, June 2014), 777-787
- [M13] N. Raillard, P. Ailliot and J. Yao, 2014. Modeling extreme values of processes observed at irregular time steps: application to significant wave height. *The Annals of Applied Statistics* **8 (1)** (March), 622-647
- [M14] T. Crivelli, B. Cernuschi-Frias, J.F. Yao and P. Bouthemy, 2013. Motion textures: modeling, classification and segmentation using mixed-state Markov random fields. *SIAM J. Imaging Science* **6(4)**, 2484-2520.
- [M15] T. Crivelli, P. Bouthemy, B. Cernuschi-Frías and J. Yao, 2011. Simultaneous motion detection and background reconstruction with a conditional mixed-state Markov random field. *Int. J. Computer Vision* **94**, 295-316.
- [M16] Z. D. Bai, D. Jiang, J. Yao and S. Zheng, 2009. Corrections to LRT on Large Dimensional Covariance Matrix by RMT. *Ann. Statistics* **37** (6B), 3822-3840.
- [M17] Z. D. Bai and J.-F. Yao, 2008. Central limit theorems for eigenvalues in a spiked population model. *Annals de l'Institut Henri Poincaré - Probabilités et Statistiques* **44** (3), 447-474.

- [M18] C. Hardouin and J.-F. Yao, 2008. Multi-parameter auto-models and their applications. *Biometrika* 95 , 335-349.
- [M19] P. Bouthemy, C. Hardouin, G. Piriou and J.-F. Yao, 2006. Mixed-state auto-models and motion texture modeling. *Journal of Mathematical Imaging and Vision*, 25, 387-402.
- [M20] Z. D. Bai and J.-F. Yao, 2005. On the convergence of the spectral empirical process of Wigner matrices. *Bernoulli*, 11(6):1059-1092.
- [M21] B. De Saporta et J. -F. Yao, 2005. Tail of a linear diffusion with Markov switching. *Annals of Applied Probability*, 15(1B):992-1018.
- [M22] C. Gaetan and J.-F. Yao, 2003. A multiple imputation Metropolis version of the EM algorithm. *Biometrika*, 90(3):643-654.
- [M23] Z. D. Bai, B.-Q. Miao and J.-F Yao, 2002. Convergence rates of spectral distributions of large sample covariance matrices. *SIAM J. Matrix Analysis* 25(1):105-127.
- [M24] J.F. Yao and J.G. Attali, 2000. On stability of nonlinear AR processes with Markov switching. *Adv. Applied Probab.*, 32:394-407.
- [M25] **(Book)** Jianfeng Yao, Shurong Zheng and Zhidong Bai, 2015. *Large Sample Covariance Matrices and High-dimensional Data Analysis* Cambridge University Press, London (Published on March 27, 2015).

5. Full list of publications

A. Book

- [A1] Jianfeng Yao, Shurong Zheng and Zhidong Bai, 2015. *Large Sample Covariance Matrices and High-dimensional Data Analysis*. Cambridge University Press, London (Published on March 27, 2015).

B. Refereed papers in international journals

- [B1] Shige Peng, Shuzhen Yang and Jianfeng Yao, 2021+. Improving Value-at-Risk prediction under model uncertainty. To appear in *Journal of Financial Econometrics* (accepted: June 2020)
- [B2] Zeng Li, Fang Han and Jianfeng Yao, 2020. Asymptotic joint distribution of extreme eigenvalues and trace of large sample covariance matrix in a generalized spiked population model. *The Annals of Statistics* 48 (6)(December), 3138-3160
- [B3] Yuyang Xu and Jianfeng Yao, 2020. On Laplacian spectrum of dendrite trees. *Linear Algebra and its Applications*, 591, 215-234
- [B4] Jian Song, Jianfeng Yao and Wangjun Yuan, 2020. High-dimensional limits of eigenvalue distributions for general Wishart process. *The Annals of Applied Probability* 30 (4)(August), 1642-1668
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D. Refereed papers in highly competitive international conferences

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