

Curriculum Vitae

(Updated Jan. 2022)

Name: Quansheng LIU

Born on Feb. 18, 1963 in Hunan, P.R. China.

Current position: Professor (of exceptional class promoted in the national level by CNU) in UBS (Université de Bretagne-Sud), France.

Deputy Director of LMBA (Laboratoire de Mathématiques de Bretagne Atlantique, CNRS UMR 6205) and Director for the site UBS of LMBA.

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Education and diplomas

- Sept. 1980 - July 1984: B. Sc. (Math.), Wuhan University
- Sept. 1984 - July 1985: M.Sc. (Complex Analysis), Wuhan University (supervisor: Prof. Yu Jiarong)
- Sept. 1987 - Nov. 1989, Ph. D. (Analysis), Wuhan University (supervisor: Prof. Yu Jiarong)
- Nov. 1989 - Feb. 1993, Ph. D. (Probability), Univ. Paris 6 (supervisor: Prof. Yves Guivarc'h)
- Sept. 1990 - Aug. 1991, DEA d'Analyse Numérique (Master of Numerical Analysis), Univ. Paris 6.
- Jan. 2000: Habilitation for supervision of doctoral researches (Habilitation à Diriger des Recherches), Univ. Rennes 1.

Positions

- Sept. 2000 - present: Full Professor, University of South Brittany (Université de Bretagne-Sud), Vannes, France.
- Sept. 1993-Aug. 2000: Lecturer / Associate Professor (MCF 2nd / 1st class), Univ. de Rennes 1.
- Sept. 1992-Aug. 1993: Assistant Teacher and Researcher (ATER), INSA de Rennes.
- Sept. 1991-Aug. 1992: Assistant Teacher and Researcher (ATER), Univ. Paris 9.

Visiting professor / Invited scientific stays

In a number of universities, including: Chinese Univ. of Hong Kong, Tsinghua Univ., Peking University, Beijing Normal Univ., Beijing Technology and Business Univ., Tianjin Univ., Wuhan Univ., Zhongnan Univ. of Economics and Law, Changsha Univ. of Science and Technology, Nanjing Univ. of Information Science and Technology, Zhejiang Univ.

Award

Holder of the scientific excellence award (PES/PEDR: 2000-2008, 2012-2020, 2021-2025)

Administration

- 1) Director of the Laboratory of Mathematics and Applications of Mathematics (UBS): from July 2007 to December 2011.
Project holder for the creation of LMBA (Laboratoire de Mathématiques de Bretagne-Atlantique, CNRS UMR 6205): Jan. 2010- Dec. 2011
Deputy Director of LMBA and director for UBS of LMBA: from January 2012 to July 2013, and from February 2017 to present.
- 2) Member of the *Conseil du Centre Henri Lebesgue* (2017-2022)
- 3) Permanent invited member of the Research Commission (UBS): 2017-2022
- 4) Permanent invited member of the Academic Commission (UBS): 2017-2020
- 5) Member of the direction team (UBS): 2020-2022.
- 6) Project holder (2020-2022) for the creation and then head of the DESS (Diplôme d'Etudes Supérieures Spécialisées, diplôme of specialized graduate studies) Modelisation Simulation Optimisation: 2002 – 2004.
- 7) Project holder for the creation and then head of the Master of Mathematics and Applications of Mathematics: 2004 - 2012, and 2018- 2020.
- 8) Member of the scientific council (conseil scientifique) of the University of South Brittany: March 2008 – March 2012;
- 9) Member of the Administration Concil (conseil d'administration) of Université de Bretagne-Sud: 10/2007 - 03/2008 ;
- 10) Member of the Conseil of the UFR Sciences et Sciences de l'Ingénieur de l'UBS: 01/2008 - 01/2009 ;
- 11) Member of the Commission of specialists (sections 25 and 26) : 2002 - 2008 ;
- 12) Member of the Council of the Department of Mathematics, Computer Science and Statistics: 2002 - 2009 ; 2017-2022
- 13) Deputy Director of the Department of Mathematics, Computer science and Statistics: 2002 - 2005.
- 14) In charge of international relations of UBS : 2002-2004.

Scientific interests: 1) Probability theory: branching processes, branching random walks, large deviations, random matrices, random environment models, martingales, fractal geometry. 2) Image processing: image denoising and deconvolution, image authentication.

Publications:

98 papers published in international journals with review, including:
Journal of European Mathematical Society, Probability Theory and Related Fields, Annals of Applied Probability, Stochastic Processes and their Applications, Bernoulli, Annals of Institute Henri Poincaré, Science in China – Mathematics;
IEEE Transaction on Image processing, SIAM Journal on Imaging Sciences, Inverse Problems and Imaging, Journal of Scientific Computing;
And others.

12 Papers published in conference proceedings with review.
For more information see the list of publications.

Ph. D. thesis supervised or co-supervised: 15

Ph.D. thesis co-supervised in progress: 1

Editorial activities and expertises:

- 1) Member of the Editorial Board of “Journal of New Media”: since 2018.
- 2) Member of the Editorial Board of “Journal of Probability”: 2013-2015.
- 3) Reviewer for Changjiang Chair Professors Program of the Ministry of Education of China: 2008, 2009, 2012.
- 4) Reviewer for the New World Mathematics Awards: 2011, 2014.
- 5) Reviewer of an OPUS project for the Government Agency of the National Research Center (Narodowe Centrum Nauki), Poland, 2019.
- 6) Reviewer for National Agency for Research (Agence Nationale de la Recherche, France), 2012
- 7) Reviewer for scientific journals including: (1) Ann. Prob., (2) Ann. Appl. Prob., (3) Prob. Th. Rel. Fields, (4) Stoch. Proc. Appl., (5) Adv. Appl. Prob., (6) J. Appl. Prob., (7) Ann. Inst. Henri Poincaré, (8) Markov Proc. Rel. Fields, (9) Sci. China., (10) Asian J. Math., (11) Chinese Sci. Bull., (12) Acta. Math. Sinica., (13) Acta Math. Scientia. (14) Chinese Ann. Math., (15) Australian & New Zealand Journal of Statistics. (16) Digital Signal Processing. (17) Applied Mathematics Letters (18) Complex Variables and Elliptic Equations; (18) SIAM Journal on Imaging Processes, (19) Soft Computing, (20) Computers, Materials & Continua, (21) Journal of Computer and Graphics, (22) JMIR mHealth and uHealth, (23) Electronic Communication in Probability, (24) Stochastic models (25) Proceedings AMS, (26) Imaging Science Journal, (27) Markov Processes and Related Fields (28) Statistics, (29) Journal of Real Time Image Processing. (30) J. Math. Anal. Appl. (31) Scientia Sinica Mathematica.
- 8) Reviewer for Mathematical Reviews: since 1996.

Visiting professor / Invited scientific stays

In a number of universities, including: Chinese Univ. of Hong Kong, Tsinghua Univ., Peking University, Beijing Normal Univ., Beijing Technology and Business Univ., Tianjin Univ., Wuhan Univ., Zhongnan Univ. of Economics and Law, Changsha Univ. of Science and Technology, Nanjing Univ. of Information Science and Technology, Zhejiang Univ.

Invited conferences (2012-2021):

- 1) July 23-25, 2021, International Conference of Union of Mathematical Imaging, Inner Mongolia Univ. Invited talk: Poisson shot noise removal by an oracular non-local algorithm.
- 2) July 12-16, 2021, 16th Workshop on Markov Processes and Related Topics, Beijing Normal Univ. and Central South Univ. Invited talk: Kesten-Stigum theorem for a supercritical multi-type branching process in a random environment.
- 3) July 8-10, 2021, Workshop in probability, Harbin Institute of Technology: Invited talk (45 minutes): convergence rate in the central limit theorem and precise moderate deviations for products of random matrices.
- 4) April 2021, 5th International Workshop on Branching Processes and their Applications

- (IWBPA 2021) at University of Extremadura, Badajoz (Spain). Invited talk: A Kesten-Stigum type theorem for a supercritical multi-type branching process in a random environment.
- 5) August 12-14, 2019, Wuhan University, Workshop in probability. Invited talk: precise large deviations asymptotics for products of random matrices.
 - 6) July 6-10, 2019, IMS-China, International Conference on Statistics and Probability, Dalian. Invited talk: rate of convergence for polymers in a weak disorder.
 - 7) July 16-20, 2018, 14th Workshop on Markov Processes and Related Topics, Beijing Normal University and Sichun University, Chengdu, China.
 - 8) June 8, 2018, Beijing Technology and Business University, International Symposium on Statistics and its Applications. Invited talk: large deviations and harmonic moments for a branching process in a random environment.
 - 9) Sept. 17-23, Joint China-France-Russia Symposium on Probability Theory. Peking Univ. Invited talk: asymptotic expansions for the distribution of particles in a branching random walk.
 - 10) July 24-28, 2017: The 39th Conference on Stochastic Processes and their Applications (SPA2017, Moskow). Invited talk: large deviations for branching processes in random environments.
 - 11) July 17-21, 2017, Wuhan Univ. The 13th International Workshop on Markov Processes and Related Topics, co-organized by Beijing Normal University and Wuhan University. Invited talk.
 - 12) July 2-9, 2017: Summer school on branching processes. Beijing normal university. Mini-course of 6 hours: limit theorems for branching processes in random environments.
 - 13) June 28 to July 2, 2017: the "2017 IMS-China International Conference on Statistics and Probability", Guangxi University for Nationalities, Nanning, China. Invited talk.
 - 14) July 31 – Aug. 2, 2016: Fractals and Related Topics. Huazhong University of Science and Technology, Wuhan. Invited talk of 30 minutes: on Mandelbrot's cascades.
 - 15) July 16-29, Changsha University of Science and Technology, summer school in probability and statistics. Two mini-courses for a total of 12 hours: 1) large deviations and branching processes in random environments; 2) probabilistic approaches in image denoising
 - 16) July 13-17, 2016: 12th Workshop on Markov Processes and Related Topics, Xuzhou, organized by Jiangsu Normal University and Beijing Normal University. Invited talk of 30 minutes: Cramér's large deviation expansion for a supercritical branching process in a random environment.
 - 17) June 18-19, 2016: mini -course of 4 hours in the summer school in probability and statistics, Zhejiang University (China). Title: Large deviations and branching processes in random environments.
 - 18) March 30, 2016, Chinese Academy of Sciences. Talk: Cramér's Large Deviation Expansion for a Supercritical Branching Process in a Random Environment.
 - 19) June-July 2015: 6 lectures of 1 hour in Morningside Centre of Mathematics, Chinese Academy of Sciences (Beijing): branching processes and large deviations.
 - 20) June 27-30, 2015: The 11th Workshop on Markov processes and related topics. Beijing Normal Univ. & Shanghai Jiangtong Univ., Shanghai. Talk: exact convergence rates in central limit theorems for a branching random walk
 - 21) June 23-25, 2015: talk at the Workshop on Markov Processes and Stochastic Models, Central South University, Changsha, China. In honor of the 80th birthday of Prof. Hou Zeng-Ting. Talk of 30 min.: Talagrand's inequality and Large deviation expansions for sums of independent random variables

- 22) May 11-13, 2015: conference in honor of Paul Doukhan's 60th birthday : "Dependence, Limit Theorems and Applications", Inst IHP, Paris. Talk of 40 min.: Sharp Large deviation inequalities and expansions for sums of independent random variables
- 23) October 8 -10, 2014, Marne-La-Vallée, Workshop "From martingales to dynamical systems". Talk of 50 min.: Cramer's large deviation expansion for martingales.
- 24) August 14-18, 2014, Xian, Beijing Normal University and Xidian University, 10th Workshop on Markov Processes and Related Topics. Talk: Asymptotic properties of supercritical branching processes in random environments.
- 25) August 7-9, 2014: Tsinghua Univ., Workshop on probability and related topics. Talk of 1 hour (invitation by Prof. S. T. Yau): Asymptotic properties of supercritical branching processes in random environments.
- 26) December 2013: Morningside Centre of Mathematics, Chinese Academy of Sciences (Beijing): Sino-Japanese Workshop on Fractals and Dynamic Systems, Dec. 26-27, 2013. Talk: On the branching measure in random environment.
- 27) March 22, 2013: séminaire triangulaire, Brest: Itérations des transformations affines aléatoires et processus de branchement pondéré avec immigration.
- 28) December 10-14, 2012: International Conference on Advances of Fractals and Related Topics, The Chinese University of Hong Kong. Mandelbrot's cascades in a random environment. 30 minutes.
- 29) July 2-4, 2012, Paris : Non stationarity, risks. Hoeffding's inequality for supermartingales. 40 minutes.
- 30) June 18-22, 2012, Journées de probabilités, Roscoff. Vitesse de convergence dans la loi des grands nombres pour les martingales. 40 minutes.
- 31) Jan. 31 – Feb. 1st, 2012. Journées ANR MANEGE, Marseille. Talk of 1 hour: Branching random walks with a random environment in time.

Organization of symposiums, conferences and research schools 2011-2021

1. June 27-July 1, 2022. The 42nd Conferences of Stochastic Processes and their Applications, Wuhan, China. Organizer for a contributed session: limit theorems for products of random matrices.
2. July 17-20, 2020: The 6th International Conference on artificial Intelligence and security. Hohhot, China. Member of the program committee.
3. July 26-28, 2019: The 5th International Conference on artificial Intelligence and security. New York, USA. Member of the program committee.
4. June 8-10, 2018: The 4th International Conference on Cloud Computing and Security (ICCCS 2018). Haikou. Member of the program committee.
5. June 16-18, 2017: The 3rd International Conference on Cloud Computing and Security (ICCCS 2017). Nanjing. Member of the program committee
6. July 29-31, 2016: International Conference on Cloud Computing and Security (ICCCS 2016), member of the program committee.
7. Aug. 13-15, 2015: International Conference on Cloud Computing and Security (ICCCS 2015), member of the program committee. See <http://www.icccsconf.org/committee.html>
8. June 23-25, 2015, Workshop on Markov Processes and Stochastic Models, Central South University, Changsha, China. In honor of the 80th birthday of Prof. Hou Zengting. Member of the program committee.
9. 14-28 May 2015: research school on branching processes and random matrices, Changsha University of Science and Technology, Changsha, China. Main organizer.

10. Sept. 23-26, 2012, ile de Berder, Golfe du Morbihan. Journées autour des champs aléatoires : des modèles aux applications. Co-organisées par le LMBA, les GDR Analyse multifractale, Géométrie stochastique et ISIS. Membre du comité d'organisation.
11. Sept. 26-30, 2011: membre du comité scientifique du colloque « Regards croisés sur les marches aléatoires et la géométrie des groupes, en honneur d'Emile Le Page». Ile de Berder, Golfe du Morbihan, France.