Xue-Mei Li

Working Experience

I am a professor at Swiss Federal Institute of Technology Lausanne (EPFL) and Imperial College London (ICL), previously a professor at the University of Warwick, had worked at the University of Connecticut (USA) as a tenure track assistant professor, and then tenured and an associate professor.

Selected Mini Courses

Young Researchers between Geometry and Stochastic Analysis	June 2021
The Indo-UK school on SPDE and applications, Bangalore	Dec 2016
PDES and Probability Thematic Trimester, Toulouse	May 2014
Jyvaskyla Summer School, Finland	August, 2013
The University of Campinas, Brazil	August 2008
The 12th Chinese summer school for PdD students	July 2007
Dimitsana Summer School on "Stochastic Differential Geometry on and Applications in Finance", Greece	July 2005
Osaka University, Japan	August 2003

Selected Lectures

Noise and Scales, In Thematic Einstein Forum Lecture series https://mathplus.de/topic-development-lab/tef-winter-2022-23/lecture-series/	26.01.2023
Lecture at One world probability seminar	Oct 2022
Plenary lecture, at XXV Brazilian School of Probability	7-13 Aug 2022
Cardiff Mathematics Colloquium, Cardiff	8 Dec 2021
Master Lecture on the history of contemporary mathematics at Tsinghua Sanya International Mathematics Forum	Dec 2019
Lecture at Celebrating 50th Anniversary in La Laguna	2019
Plenary lecture at 8th International Congress of Chinese Mathematicians	June 2019
Lecture at Conference on Asymptotic Problems in Honor of Mark Freidlin's Birthday	2013

Interesting Statistics: In pre-pandemic 2019, I made 16 trips to deliver 17 lectures, During pandemic March 2020-Nov 2021, I made not a single academic related trip, delivered 9 lectures. Post opening, from my first in person talk on 8 th Dec 2011 (In the evening of that day, fearing a new variant ICL announced to return to online teaching immediately!) to March 2023, I made 11 trips and delivered 21 talks.

Acknowledging Supports

While affiliated with the University of Connecticut (1995-2002), I was glad to have the support from the National Science Foundation, as part of the Probability Program and the Geometric Analysis Program (DMS-0072387, DMS-9803574, DMS-9626142).
In the U.K., I was supported by the LMS (East Midlands Stochastic Analysis Seminars), the EPSRC through the grants (EP/V026100/1, EP/E058124/1, EP/S023925/1) and from the Royal Society / Leverhulme Trust.

Fellowships

I was a Research Fellow at the Mathematical Science Research Institute at Berkeley, an Alexander von Humboldt Research Fellows at the University of Bonn and University of Bochum to work with Professor Sergio Albeverio, and a Senior Royal Society Leverhulme Research Fellow.

Scholarship

SCHOLARSHIP, THE SINO-BRITISH FRIENDSHIP SCHOLARSHIP SCHEME	1988-1992

The Sino-British Friendship Scholarship Scheme was established in 1986 jointly by the British Government, the Chinese Government, and Sir Y. K. Pao. It was administered by The Ministry of Chinese Higher Education.

Education

PH.D., THE UNIVERSITY OF WARWICK	1993

Editorial Work

ELECTRONIC JOURNAL OF PROBABILITY	Associate Editor
ELECTRONIC COMMUNICATIONS IN PROBABILITY	Associate Editor

Scientific Committees

STANDING COMMITTEE OF THE UK-JAPAN WINTER SCHOOL	current
SCIENTIFIC COMMITTEE OF TSINGHUA SANYA INTERNATIONAL MATHEMATICS FORUM	current
SPA SCIENTIFIC PROGRAM COMMITTEE	2019
MANAGEMENT COMMITTEE, CDT ON MATHEMATICS OF RANDOM SYSTEM	2019-2022

Books of Original Research

THE GEOMETRY OF FILTERING, WITH K. D. ELWORTHY AND Y. LE JAN
ON THE GEOMETRY OF DIFFUSION OPERATORS AND STOCHASTIC FLOWS;
WITH K. D. ELWORTHY AND Y. LE JAN,

Links

ARXIV PAGE: HTTPS://ARXIV.ORG/A/LI_X_9.HTML
ORCID: HTTPS://ORCID.ORG/0000-0002-5966-6240
GOOGLE SCHOLAR
PERSONAL HOMEPAGE
IMPERIAL COLLEGE LONDON HOMEPAGE
EPFL WEBPAGE

Recent Preprints

- COARSE RICCI CURVATURE OF WEIGHTED RIEMANNIAN MANIFOLDS, WUTH MARC ARNAUDON AND BENEDIKT PETICO
  2023
- FLUCTUATIONS OF STOCHASTIC PDES WITH LONG-RANGE CORRELATIONS, WITH LUCA GEROLLA AND MARTIN HAIRER
  2023

- On the (Non-)Stationary Density of Fractional-Driven Stochastic Differential Equations, with Fabien Panloup and Julian Sieber
  2022
- Diffusive and rough homogenisation in fractional noise field, with J. Gehringer
  arXiv:2006.11544
- Homogenization with fractional random fields, with J. Gehringer
  arXiv:1911.12600

Selected Recent Publications

- Logarithmic heat kernel estimates without curvature restrictions, Annals of Probability, with X. Chen X and B. Wu
  Vol. 51, No. 2, 442-477 (2023)
- Log-Hessian and Deviation Bounds for Markov Semi-Groups, and Regularization Effect in L1, with N. Gozlan N, M. Madiman, C. Roberto, P.-M. Samson and Samson
  Potential Analysis, 58, 123-158 (2023)
- Generating diffusions with fractional Brownian motion, with M. Hairer
  Communications in Mathematical Physics, 396, 91-141, 2022
- Slow-fast systems with fractional environment and dynamics, with J. Sieber
  Annals of Applied Probability, Probab. 32(5): 3964-4003 (October 2022).
- Functional limit theorems for the fractional Ornstein-Uhlenbeck process, with J. Gehringer J
  ournal of Theoretical Probability, Vol: 35, Pages: 426-456 (2022)
- Functional limit theorems for volterra processes and applications to homogenization, with J. Gehringer J and J. Sieber 2022,
  Nonlinearity, Vol: 35, Pages: 1-37, ISSN: 0951-7715
- Mild Stochastic Sewing Lemma, SPDE in Random Environment, and Fractional Averaging, with J. Sieber
  Stochastics and Dynamics, vol. 22, no. 07 (2022)
- Hessian formulas and estimates for parabolic Schrödinger operators
  Journal of Stochastic Analysis, Vol: 2, Pages: 1-54, (2021)

Selected Publications

- Averaging dynamics driven by fractional Brownian motion, with M. Hairer
  Annals of Probability, Vol: 48, Pages: 1826-1860 (2019)
- Homogenisation on homogeneous spaces. With an appendix by Dmitriy Rumynin.
  J. Math. Soc. Japan 70 (2018)
- Perturbation of conservation laws and averaging on manifolds
  Computation and Combinatorics in Dynamics, Stochastics and Control, Editors: Celledoni, Di Nunno, Ebrahimi-Fard, Munthe-Kaas (2018)

- First order Feynman-Kac formula, with J. Thompson
  Stochastic Processes and their Applications, Vol: 128,
- Random Perturbation to the Geodesic Equation.
  Annals of Prob., 44(1), (2016).
- A Poincare Inequality on Loop spaces, with X. Chen and B. Wu
  J. of Funct. Anal. (2010)
- An averaging principle for Integrable stochastic Hamiltonian systems
  Nonlinearity (2008).
- Geometric stochastic analysis on path spaces, With K.D. Elworthy.
  In "Proceedings of the International Congress of Mathematicians", Madrid, (2006).
- The importance of strictly local martingales, applications to radial Ornstein-Uhlenbeck processes, With K.D. Elworthy and M. Yor,
  Probab. Theory Relat. Fields. Vol. 115, 325-355 (1999).
- Bounded and L^2 harmonic forms on universal covers, With K.D. Elworthy and S. Rosenberg
  Geometric and Functional Analysis. Vol.8 283-303 (1998).
- Concerning the geometry of stochastic differential equations and stochastic flows, with KD Elworthy and Y. Le Jan
  New Trends in Stochastic Analysis: Proceedings of a Tanaguchi International Workshop Charingworth Manor (1997)
- On the tails of the supremum and the quadratic variation of strictly local martingales, with KD Elworthy and M. Yor
  Séminaire de Probabilités, XXXI, Publisher: Springer, Berlin, Pages: 113-125 (1997)
- On extensions of Myers' theorem.
  Bull. London Math. Soc., 27, 392-396, (1995)
- Formulae for the derivatives of heat semigroups, With K. D.Elworthy
  J. Funct. Anal. (1994).
- Strong p-completeness of stochastic differential equations and the existence of smooth flows on non-compact manifolds
  Probab. Theory Relat. Fields, 100 (4), 485-511 (1994).
- Stochastic differential equations on noncompact manifolds: moment stability and its topological consequences
  Probability Theory and Related Fields, Vol: 100, Pages: 417-428 (1994)