

Yan Liu

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RESEARCH INTERESTS

Mathematical Statistics	(1) Bootstrap method for time series data
	(2) Statistic analysis on infinite variance data
	(3) High-dimensional model selection problem
	(4) Quantile regression
Time Series	(1) Optimal prediction problem of stationary processes
	(2) Robust methods for frequency domain in time series analysis
	(3) Extremogram and quantile-based statistical inference
	(4) Estimation of the tail index of heavy-tailed processes
	(5) Nonregular method for estimation of time series
Financial	(1) Optimal portfolio for large-scale funding
Engineering	(2) Optimal portfolio under the multi-period model

POSITION

2017 —	Assistant Professor at Kyoto University
2017 — 2017	Assistant Professor at Waseda University
2016 — 2017	Research Associate at Waseda University
2015 — 2016	JSPS Research Fellowship for Young Scientists (PD)
2014 — 2015	JSPS Research Fellowship for Young Scientists (DC2)

MEMBERSHIPS

2015 —	Japan Statistical Society
2012 —	Mathematical Society of Japan
2013 — 2014	Early Bird Program, Waseda University

EDUCATION

2015 — 2016	Postdoctoral at Waseda University, Tokyo
2013 — 2015	Ph.D., Mathematical Statistics, Waseda University, Tokyo Thesis: Asymptotic Theory for Non-standard Estimating Function and Self-normalized Method in Time Series Analysis Supervisor: Dr. Masanobu Taniguchi Advisor: Dr. Takeru Suzuki, Dr. Ritei Shibata, Dr. Yasutaka Shimizu
2011 — 2013	Master of Science, Mathematical Statistics, Waseda University, Tokyo Thesis: Nonparametric Methods in Time Series Analysis Supervisor: Dr. Masanobu Taniguchi
2008 — 2011	Bachelor of Science, Applied Mathematics, Waseda University, Tokyo

LANGUAGES

Chinese	Mother tongue
Japanese	Bilingual
English	Fluent
French	Some knowledge
German	Some knowledge
Italian	Some knowledge

GRANTS AND FELLOWSHIPS

2017	Grant-in-Aid for Young Scientists (17K12652), “Theoretical development on bootstrap method and empirical likelihood method on temporal and spatial data”, ¥500,000
2015	JSPS (26-7404), “Research on the robust statistics applied to the time series models with infinite variance”, ¥1170,000
2014	JSPS (26-7404), “Research on the robust statistics applied to the time series models with infinite variance”, ¥1,000,000
2013	Early Bird Program Fellowships (13E15), “On the properties of tail index estimators by self-normalized method”, ¥700,000

PUBLICATIONS

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| 2018 | Liu , Tamura and Taniguchi, “Asymptotic theory of test statistic for sphericity of high-dimensional time series”, <i>Journal of Time Series Analysis</i> , to appear. |
| 2017 | Liu , “Statistical inference for quantiles in the frequency domain”, <i>Statistical Inference for Stochastic Processes</i> , 20 (3), 369-386. |
| 2017 | Liu , Nagahata, Uchiyama and Taniguchi, “Discriminant and cluster analysis of possibly high-dimensional time series data by a class of disparities”, <i>Communications in Statistics - Simulation and Computation</i> , 46 (10), 8014-8027. |
| 2017 | Liu , “Robust parameter estimation for stationary processes by an exotic disparity from prediction problem”, <i>Statistics & Probability Letters</i> , 129 , 120-130. |
| 2016 | Liu , “Optimal portfolio of the Government Pension Investment Fund based on the systemic risk evaluated by a new asymmetric copula”, <i>Advances in Science, Technology and Environmentology</i> , B13 , 19-33. |
| 2016 | Suto, Liu and Taniguchi, “Asymptotic theory of parameter estimation by a contrast function based on interpolation error”, <i>Statistical Inference for Stochastic Processes</i> , 19 (1), 93-110. |
| 2015 | Akashi, Liu and Taniguchi, “An empirical likelihood approach for symmetric α -stable processes”, <i>Bernoulli</i> , 21 (4), 2093-2119. |
| 2015 | Liu , “Variance stabilizing properties of Box-Cox transformation for dependent observations”, <i>Advances in Science, Technology and Environmentology</i> , B12 , 63-70. |
| 2014 | Liu , “Asymptotics for M-estimators in time series”, <i>Advances in Science, Technology and Environmentology</i> , B10 , 55-67. |
| 2013 | Liu , “Asymptotic moments of symmetric self-normalized sums”, <i>Scientiae Mathematicae Japonicae</i> , 77 (1), 59-67. |

PRESENTATIONS

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| Oct 2017 | Liu , “Robust parameter estimation for irregularly observed stationary process”, Kyoto International Seminar, Kyoto Terra |
| Oct 2017 | Liu , Tamura and Taniguchi, “Asymptotics of test statistic for sphericity of high-dimensional time series without diagonalizability condition”, Waseda International Symposium, Waseda University |
| Sept 2017 | Liu , “A test for stationary by copula spectral density”, The Mathematical Society of Japan, Yamagata University |
| Sept 2017 | * Liu , Nagahata and Taniguchi, “Linear discriminant analysis for high-dimensional time series”, Japan Statistical Society, Nanzan University |
| Jun 2017 | Liu , *Xue and Taniguchi, “Robust interpolation problem in L^p ”, Hong Kong University of Science and Technology, Hong Kong |
| Mar 2017 | * Liu , Chen, Chan and Taniguchi, “A frequency domain bootstrap for irregularly spaced spatial data”, The Mathematical Society of Japan, Tokyo Metropolitan University |
| Mar 2017 | Liu , “Statistical inference for quantiles in frequency domain”, Keio International Symposium, Keio University |
| Mar 2017 | * Liu , Chen, Chan and Taniguchi, “A frequency domain bootstrap for irregularly spaced spatial data”, Ise-Shima International Seminar, Ise-Shima |
| Feb 2017 | Liu , “Robust parameter estimation for irregularly observed stationary process”, Waseda International Symposium, Waseda University |
| Oct 2016 | Liu , “Statistical inference for quantiles in frequency domain, Hokkaido International Symposium, Hokkaido University |

Oct 2016	* Liu , Chen, Chan and Taniguchi, “A frequency domain bootstrap for irregularly spaced spatial data”, Waseda International Symposium, Waseda
Oct 2016	*Xue, Liu and Taniguchi, “Robust interpolation problems in L_p ”, Waseda International Symposium, Waseda
Sept 2016	Liu , “Quantile tests in frequency domain for sinusoid models”, The Mathematical Society of Japan, Kansai University
Sept 2016	*Xue, Liu and Taniguchi, “Robust interpolation problems in L_p ”, The Mathematical Society of Japan, Kansai University
Sept 2016	Liu , “Robust statistical analysis on irregular time series data and its asymptotic theory”, Japan Statistical Society, Kanazawa University
Jul 2016	Liu , “Statistical theory for quantiles in frequency domain”, Research Seminar on Statistics and Financial Mathematics, Waseda University
Mar 2016	*Xue, Liu and Taniguchi, “Minimax extrapolation error of predictors”, The Mathematical Society of Japan, Tsukuba
Mar 2016	Liu , “Box-Cox transformation for variance stabilization of dependent observations”, The Mathematical Society of Japan, Tsukuba
Mar 2016	Liu , “Box-Cox transformation and variance stabilization”, Ibusuki International Seminar, Ibusuki
Mar 2016	Liu , “Robust parameter estimation for irregularly observed stationary process”, Kumamoto International Symposium, Kumamoto University
Mar 2016	* Liu , Xue and Taniguchi, “Minimax extrapolation error of stationary processes”, Waseda International Symposium, Waseda University
Nov 2015	Liu , “Variance stabilization and robust permutation tests”, Hakone Seminar, Hakone
Nov 2015	*Nagahata, Liu , Uchiyama and Taniguchi, “Discriminant and cluster analysis of high-dimensional time series data”, Hakone Seminar, Hakone
Nov 2015	* Liu , Xue and Taniguchi, “Minimax extrapolation error of predictors”, Waseda International Symposium, Waseda University
Sept 2015	*Nagahata, Liu , Uchiyama and Taniguchi, “Discriminant and cluster analysis of high-dimensional time series data”, The Mathematical Society of Japan, Kyoto Sangyo University
Jun 2015	*Nagahata, Liu , Uchiyama and Taniguchi, “Discriminant and cluster analysis of high-dimensional time series data by a class of disparities”, Project Research Seminar on Financial and Pension Mathematics, Waseda University
Mar 2015	Liu , “Asymptotic Theory for Minimum Contrast Estimation in Time Series Analysis”, The Mathematical Society of Japan, Meiji University
Mar 2015	Liu , “A new class of minimum contrast estimators for parameter estimation in time series”, Miura Statistical Seminar, Miura
Mar 2015	Liu , “Empirical likelihood methods for quantile regression with long range dependent errors”, Waseda International Symposium, Waseda University
Feb 2015	Liu , “Prediction error or interpolation error? A general perspective of parameter estimation in time series analysis”, Technische Universität München, Munich
Jan 2015	Liu , “Statistical Inference for Stable Process”, Izu Seminar, Izu
Oct 2014	Liu , “Minimum Contrast Estimation for Spectral Densities Based on Exotic Disparity”, Kaken Symposium, Niigata University
Sept 2014	Liu , “Quantile Estimation in Frequency Domain”, The Mathematical Society of Japan, Hiroshima University
Sept 2014	*Suto, Liu and Taniguchi, “Parameter Estimation by a Contrast Function Based on Interpolation Error”, The Mathematical Society of Japan, Hiroshima University

Sept 2014	Liu , “Robust Estimation of Frequencies”, Kaken Symposium, Nara University of Education
Sept 2014	*Suto, Liu and Taniguchi, “Parameter Estimation by a Contrast Function of Interpolation Error”, Kaken Symposium, Nara University of Education
May 2014	*Suto, Liu and Taniguchi, “Asymptotic Theory of Parameter Estimation by a Function Based on Interpolation Error”, Project Research Seminar on Financial and Pension Mathematics, Waseda University
Mar 2014	Liu , “M-estimation in Time Series and Its Applications”, The Mathematical Society of Japan, Gakushuin University
Mar 2014	(Poster) “On the Properties of Tail Index Estimators by Self-normalized Method”, Final Results Presentation of Young Researchers, Waseda University
Mar 2014	Liu , “Tail Index Estimation by Self-normalized Method”, Nishi-Izu Seminar, Nishi-Izu
Mar 2014	*Akashi, Liu and Taniguchi, “Empirical Likelihood Ratio for Symmetric Alpha-stable Processes”, Waseda International Symposium, Waseda University
Mar 2014	Liu , “Generalized Periodogram and Its Statistical Inference for Time Series”, Waseda International Symposium, Waseda University
Jan 2014	Liu , “Robust Spectral Estimation in Time Series Analysis”, High Dimensional Statistical Analysis and Related Topics, Waseda University
Nov 2013	(Poster) “On the Properties of Tail Index Estimators by Self-normalized Method”, WINeST Symposium, Waseda University
Nov 2013	Liu , “Asymptotics for M-Estimators in Time Series”, Workshop in Statistical Applications and Time Series, Kanazawa University
Sept 2013	Liu , “A New Way to Estimate Tail Index”, The Mathematical Society of Japan, Ehime University
Aug 2013	Liu , “The New Class of Estimating Tail Index by Self-normalization”, Bird Meeting, Waseda University
May 2013	Liu , “Asymptotic Moments of Symmetric Self-normalized Sums”, Project Research Seminar on Financial and Pension Mathematics, Waseda University
Mar 2013	* Liu and Taniguchi, “Hypothesis Testing for Vector Stable Processes”, The Mathematical Society of Japan, Kyoto University
Apr 2012	Liu , “Introduction to Rank Tests”, Seminar of Physics and Mathematics, Waseda University
Dec 2010	Liu , “From Probability Distribution to Black-Scholes Model”, Seminar of Physics and Mathematics, Waseda University

PROFESSIONAL EXPERIENCE

Organizer	Miura Statistical Seminar (Mar. 2015)
Referee	<i>Journal of the American Statistical Association; Journal of Multivariate Analysis; Statistic Sinica; Electronic Journal of Statistics; Journal of Business & Economic Statistics; Sankhya A; American Journal of Mathematical and Management Sciences; Statistical Inference for Stochastic Processes; Advances in Science, Technology and Environmentology; Scientiae Mathematicae Japonicae; Communication in Statistics - Simulation and Computation</i>

ATTENDANCE

Nov 2014	From Robust to High-dimensional Statistics: 50 Years of Statistics at ETH Zurich, ETHZ, Switzerland
May 2014	Self-normalized Asymptotic Theory in Probability, Statistics and Econometrics, National University of Singapore, Singapore

VISITING APPOINTMENTS

2017 Visiting Scholar	School of Mathematics & Statistics, University of New South Wales (Professor William Dunsmuir)
2016 Visiting Scholar	Department of Statistics, Chinese University of Hong Kong (Professor Ngai Hang Chan)
2015 Visiting Scholar	Department of Mathematics, Ruhr-University Bochum (Professor Holger Dette)
2015 Visiting Scholar	Department of Statistics, University of Illinois at Urbana-Champaign (Associate Professor Xiaofeng Shao)
2015 Visiting Scholar	Department of Mathematics, Technical University of Munich (Professor Claudia Klüppelberg)

TEACHING EXPERIENCE

2017	Linear Algebra, Waseda University
2017	Basic Experiments in Science and Engineering 1B I, Waseda University
2017	Basic Experiments in Science and Engineering 1A IV, Waseda University
2016	Mathematics Q&A, Waseda University
2011 — 2015	Teaching Assistant as a Mathematics Tutor in school of FSE, Waseda University
2012 — 2014	Teaching Assistant as a Statistics Tutor in school of ILS, Waseda University
2010 — 2013	Teaching Assistant as a English Tutor in school of CSE, Waseda University

RESEARCH EXPERIENCE

2013 — 2014	Research Assistant for Simulations of Some Warranty Models, Waseda University
2013 — 2014	Research Assistant for Script Writing, Waseda University
2014	Research Assistant for Statistic Analysis of Questionary, Waseda University
2013	Research Assistant for Translation Work on Insurance, The University of Hong Kong
2012	Research Assistant for Statistics of Transfer Pricing, Waseda University

MEDIA

Apr 2015	<i>Waseda University Admission Brochure 2016</i> , p.9
Mar 2014	<i>Waseda Riko Plus 2014</i> , pp. 68-70