Curriculum Vitae

General

Name: Song Xi CHEN

Current Employment: University Chair Professor
Tsinghua University;
Mail Address: Department of Statistics and Data Science, Tsinghua University
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Academic History

Ph.D. in Statistics, 1993, Australian National University.

M.Sc. in Statistics and Operations Research, 1990, Victoria University of Wellington.

M.Sc. in Mathematical Statistics, 1988, Beijing Normal University.

B.Sc. in Mathematics, 1983, Beijing Normal University.

Employment

July 2024—: University Chair Professor
Chair, Department of Statistics and Data Science
Tsinghua University

June 2008—June 2024: University Chair Professor
Founding Director, Center for Statistical Science (2010-2019)
Chair Professor, Guanghua School of Management (since 2008)
Chair Professor, School of Mathematical Sciences (since 2021)
Peking University

July 2006—Feb 2017: Full Professor of Statistics,
Department of Statistics, Iowa State University

Nov 2003—July 2006:	Associate Professor, Department of Statistics, Iowa State University
July 2000- Dec. 2003:	Associate Professor, National University of Singapore
Jan. 1995 – June 2000:	Senior Lecturer/Lecturer, La Trobe University.
Nov. 1992 - Jan. 1995:	Statistician, CSIRO Marine Science and Biometrics Unit.
July 1983 – Aug. 1985:	Lecturer, Beijing Institute of Economics.

Editorial Service:

Associate Editor: *Environmentrics*, 2018-now

Associate Editor: *Journal of the American Statistical Association* 2018-2021

Associate Editor: *The Annals of Statistics*, 2010-2019.

Associate Editor: *Journal of Business and Economics Statistics*, 2012-2018

Joint Editor: *Statistics and Its Interface*, 2010-2014.

Joint Editor: *Statistica Sinica* Special Issue on Big Data in Environmental Studies, 2018

Associate Editor: *Statistica Sinica* Special Issue in Memory of Professor Peter Hall, 2016-2017.

Awards and Service

President，Society for Probability and Statistics of China, 2022-2026

Vice President, Statistical Association of China, 2023-2027

Member of Chinese Academy of Science, since 2021

Scientific Secretary, Bernoulli Society, 2019-2023

Council Member—Institute of Mathematical Statistics, 2016-2019

Fellow of American Association for the Advancement of Science, 2018

Elected Council Member of IMS 2016-2019.

First Class Award for Research in Natural Science, Ministry of Education, China, 2017

Elected Member of International Statistical Institute, 2011.

Fellow of the Institute of Mathematical Statistics, 2009

Fellow of the American Statistical Association, 2009.

Elected Board Member of International Chinese Statistical Association 2008-2009, 2012-2013.

Mid-Career Research Excellence Award, Iowa State University 2008.

Australian National University Ph.D Award，1990-1992
Telecom New Zealand Scholarship，1989

Citation Profile (Web of Science):

H-Index 36, I-10 Index 59, Citations (without self citations) 5019

3 Web of Science Highly Cited papers； World 2% top scientist since 2020.

Current Research Support:

Integrated Research on Multispheric Interactive Data Products in West Pacific, **National Natural Science Foundation of China**, Integrated Grant, PI, 2024-2026, RBM 15 million.

Mathematical Problems and Algorithms in Atmospheric System Modeling by Integrating Massive Observations, **National Natural Science Foundation of China** Key Grant, PI, 2023-2027, RBM 14.6 million.

Past Research Support:

Survey Study on Statistics Discipline, **National Natural Science Foundation of China**, Tianyuan Grant, PI, 2024, RBM 300,000.

Neural mechanism modeling and data assisted diagnosis and treatment algorithms for children with brain development disorders, **National Natural Science Foundation of China**, Tianyuan Grant, Co-PI, 2021-2024, RBM 2 million.

Statistical Inference for Varying Coefficient Epidemiological Models, **National Natural Science Foundation of China**, PI, 2021-2024, RBM 520,000.

Statistical Models for Air Quality Assessment, **China National Key Research Fund**, Chief Scientist, 2016-2020，RBM 16 millions。

Big Data Driven Management Science Study Methods, **National Natural Science Foundation of China**, Key Grant, PI, 2016-2020, RMB 3.1 million.

High Dimensional Statistical Inference，**National Natural Science Foundation of China**，Zhongdian Grant， PI, RBM 2.2 million，2012-2016。

Statistical Inference for Continuous Time Stochastic Processes, **National Natural Science Foundation of China**，Standard Grant， PI, 2014-2017, RBM 550,000.

A Nonparametric Approach to Population Size Estimation for Multiple Systems Capture-Recapture surveys, PI, **National Science Foundation**: SES-0518904, 09.2005 - 08. 2009, **$280,416**, Co-PIs: S. Nusser and J. Opsomer.

A Supplement to NSF SES 0650938: A Nonparametric Approach to Population Size Estimation for Multiple System Capture-Recapture Surveys. PI, **US Census Bureau** via NSF $19,080.00

China-US Exchange Grant in Mathematical Sciences, PI, **National Science Foundation**, $40,000, August 2007-August 2009.

Statistical Inference for Continuous-Time Stochastic Processes, **PI, National Science Foundation**: DMS-0604563, $165,018, 08. 2006 - 08. 2010, Co-PI: Liang Peng of GA Tech.

NSF DMS-NIH, Mathematical Biology: Development of High-Dimensional Data Analysis Methods for the Identification of Differentially Expressed Gene Sets. Co-PI, **PI:** Dan Nettleton; $177.000 per year for three years, 2006-2009.

High Dimensional Multivariate Analysis, **NSF-DMS**- 1309210. $70,000. 2013-2017.

Applications of Empirical Likelihood in Semi- and Non-parametric Statistical Inference, PI, **National University of Singapore Academic Research Grant**, Nov 2002-Nov 2003, $46,306.

Computer-Intensive Statistical Methods for Testing Specifications of Financial Market Models, PI, **National University of Singapore Academic Research Grant**, 17-Dec. 2001 - 31-Dec. 2004, $88,300.

Empirical Likelihood and Computation, **Australian Research Council Grant**, 1994-1996; $10,000, PI, jointly with B. M. Brown

Non-parametric Curve Estimation, **Australian Research Council International Exchange grant**, 1998-1999, PI, $13,000.

Research Interests

Inference for High Dimensional Data; Environmental Modeling and Assessment; Empirical Likelihood; Statistical and Machine Learning; Inference for stochastic processes.

Graduate Students

Current Ph.D students at PKU

Haoxuan Sun, started in 2019.

Han Yan and Peifeng Tong, both started in 2020.

Jingkun Qiu and Wu Su, both started in 2021.

Hanyue Chen, started in 2022.

Mingyuan Bian, Qilong Lu, and Haoxiang Zhan, both started in 2023.

Xinru Ding, He Li, Tianyu Li and Zelin Xiao, both started in 2024.

Current Master students at PKU

Axiao Peng and Binghao Wang, both started in 2022.

Yao Jia and Lei Qian, both started in 2023.

Past Ph.D Students:

Jia Gu, completed in 2024, now an Assistant Professor at Center for Data Science, Zhejiang University

Yuru Zhu, completed in 2023, now a postdoc with Univ of Pennsolvinia

Xiangyu Zheng, completed in 2022, now with JD.com

Lei Chen, completed in 2020, now an Assistant Professor Southernwest University of Economics and Finance

Shuang Zhang, completed in 2020, now with People's Bank of China

Shuyi Zhang, completed in 2019 at PKU, now an Assistant Professor with East China Normal University

Xiaojun Mao, completed 2018 at ISU, now Associate Professor with Shanghai Jiaotong University

Liuhua Peng, completed 2017 at ISU, now Assistant Professor at University of Melbourne

Xuan Liang, completed 2017 at PKU, now Lecturer at Australian National University.

Ying Wang, completed 2017 at PKU, first a postdoc at University of Auckland; now Associate Professor with Renmin University.

Tao Zou, completed 2016 at PKU, now Associate Professor at Australian National University.

Jing He, completed 2016 at PKU, now Associate Professor at South-West University of Finance and Economics.

Shuo Li, completed 2016 at PKU, now Associate Professor at Tianjin University of Finance and Economics.

Bin Guo, completed 2015 at PKU, now Professor at at South-West University of Finance and Economics.

Yumou Qiu, High Dimensional Statistical Inference for Covariance Matrices; completed 2014 at ISU, now Associate Professor at Peking University.

Shan Yang, Statistical Inference for Stochastic Processes and Applications. Completed 2014 at ISU, Now Statistician at Merck.

Jinyuan Chang: Financial Econometrics and High Dimensional Statistical Inference, Completed 2013, now Professor at Southern University of Finance and Economics.

Zheng Xu, Essays on Statistical Finance; Completed 2013 at ISU, now Assistant Professor with Wright State University.

Jun Li, High Dimensional Data and Research on US Census Dual System Surveys. Completed in 2013; now Associate Professor, Kent State University.

Pingshou Zhong, Empirical likelihood method and High Dimensional Data; graduated 2011, now Professor with Department of Statistics, University of Illinoi Chicago.

Ying-Li Qin, Statistical Inference for high dimensional data. Completed Winter 2009; now Associate Professor, Department of Statistics, University of Waterloo.

Chengyong Tang, Parameter estimation for diffusion processes and Nonparametric Approach for Census Undercount Estimation. Completed summer 2008, now Professor at Temple University. After getting tenure at National University of Singapore.

Dong Wang, Nonparametric Imputation of Missing values and empirical likelihood. Completed in 2006, now Associate Professor at University of Nebraska.

Past Master Students at PKU

Xia Yan, 2024
Shanshan Luo, 2023
Li Chen, 2021
Xiaoyuan E, 2021
Huijie Liu, 2019
Meili Wang, 2016?
Zhenzhong Wang, 2017
Wenqing Wang 2012?
Fan Wang, 2012

Publications

[1] Chen, S.X., Smith, P.J., Shafi, M. and Vere-Jones, D. (1990). Some improvements to conventional importance sampling techniques for coded system using Viterbi decoding. Electronics Letters, 26, 802-806.

[2] Chen, S.X. (1993). On the coverage accuracy of empirical likelihood confidence regions for linear regression model. Annals of Institute of Statistical Mathematics, 45, 621-637.

[3] Chen, S.X. and Hall, P. (1993). Smoothed empirical likelihood confidence intervals for quantiles. Annals of Statistics, 21, 1166-1181.

[4] Chen, S.X. and Hall, P. (1994). On the calculation of standard error for quotation in confidence statements. Statistics and Probability Letters, 19 147-151.

[5] Chen, S.X. (1994). Empirical likelihood confidence intervals for linear regression coefficients. Journal of Multivariate Analysis, 49, 24-40.

[6] Chen, S.X. (1994) Comparing empirical likelihood and bootstrap hypothesis tests. Journal of Multivariate Analysis, 51, 277-293.

[7] Chen, S.X. (1996a) A kernel estimate for density of a biological population using line transect sampling. Royal Statistical Society Ser. C: Applied Statistics 45, 135-150.

[8] Chen, S.X. (1996b) Studying school size effects in line transect sampling using the kernel method. *Biometrics* 52, 1283-94.

[9] Chen, S.X. (1996c) Empirical likelihood confidence intervals for nonparametric density estimation. *Biometrika,* 83, 329-341.

[10] Chen, S.X. and Polacheck, T. (1996) Kernel estimates of mean school size for IWC minke whale data. *Report of International Whaling Commission,* 46, 341-348.

[11] Chen, S.X. (1997). Empirical likelihood based kernel density estimation. *Australian Journal of Statistics,* 39, 47-56

[12] Chen, S.X. (1998). Measurement errors in line transect surveys. *Biometrics*, 54, 899-908.

[13] Brown, B. M. and Chen, S. X. (1998) Combined Empirical Likelihood. *Annals of Institute of Statistical Mathematic,* 50, 697-714.

[14] Brown, B. M. and Chen, S. X. (1999) Beta-Bernstein smoothing for regression curves with compact support. *Scandinavian Journal of Statist*ics, 26, 47-59.

[15] Chen, S. X. (1999a) Estimation in independent observer line transect surveys for clustered populations. Biometrics 55, No. 3, 754-759.

[16] Chen, S. X. and Woolcock, J. (1999) A condition for designing bus-route type access site surveys to estimate recreational fishing effort. *Biometrics*, 55, No. 3, 799-804.

[17] Chen, S. X. (1999b) Beta kernel estimators for density functions. *Computational Statistics and Data Analysis*, 31, 131-145.

[18] Chen, S. X. (2000a) Beta kernel smoothers for regression curves. *Statistica Sinica*, 10, 73-91.

[19] Chen, S. X. (2000b) Animal abundance estimation for independent observer line transect surveys. Special Issue of *Environmental and Ecological Statistics: Statistical Ecology and Forest Biometry* 7, No. 3, 285-299.

[20] Chen, S. X. (2000c) Gamma kernel estimators for density functions. *Annals of Institute of Statistical Mathematics,* 52, 471-480.

[21] Chen, S. X. and Lloyd, C. J. (2000). A non-parametric approach to the analysis of two stage mark-recapture experiments. *Biometrika*, 87, 633-649.

[22] Chen, S. X. and Qin, Yong Song (2000). Empirical Likelihood confidence interval for a local linear smoother. *Biometrika* ,87, 946-953.

[23] Chen, S. X. and Cowling, A. (2001). Measurement Errors in Line Transect Surveys where Detection varies with Distance and Size.*Biometrics*,57, 732-742.

[24] Chen, S. X. and Qin, Yong Song (2002). Confidence interval based on a local linear smoother. *Scandinavian Journal of Statist*ics, 29, 89-99.

[25] Chen, S. X. and Lloyd, C. J. (2002). Estimation of population size based on biased samples using nonparametric binary regression. *Statistica Sinica*, 12, 505-518.

[26] Chen, S. X. (2002). Local linear smoothers using asymmetric kernels. *Annals of Institute of Statistical Mathematics,* 54, 312-323.

[27] Chen, S. X, Yip, P. and Zhou, Y. (2002). Sequential line transect surveys. *Biometrics*, 58, 263-269.

[28] Chen, S. X., Hardle, W. and Kleinow, T. (2002). An empirical likelihood goodness-of-fit test for diffusions. *Applied quantitative finance*, 259--281, *Springer, Berlin*.

[29] Chen, S. X. and Hall, P. (2003). EFFECTS OF BAGGING AND BIAS CORRECTION ON ESTIMATORS DEFINED BY ESTIMATING EQUATIONS, *Statistica Sinica*, 13, 97-109.

[30] Chen, S. X and Cui, H-J. (2003). An extended empirical likelihood for generalized linear models. *Statistica Sinica*, 13, 69-81.

[31] Cui, H-J and Chen, S.X. (2003). Empirical likelihood confidence regions for parameter in the error-in-variable models, *Journal of Multivariate Analysis*, 84 (1), 101-115.

[32] Chen, S. X. and Qin, J. (2003) Empirical likelihood based confidence intervals for data with possible zero observations. *Statistics and Probability Letters*, 65, 29--37.

[33] Chen, S. X., Haredle, W. and Li, M. (2003). An empirical likelihood goodness-of-fit test for time series. *Journal of The Royal Statistical Society*, Series B, 65, 663-678.

[34] Chen, S. X., D. H. Y. Leung and Qin, J. (2003) Information Recovery in a Study with Surrogate Endpoints. *Journal of the American Statistical Association, 98, 1052-1062.*

[35] Chen, S. X. and Qin, Y-S. (2003). Coverage accuracy of confidence intervals in nonparametric regression. *Acta Math. Appl. Sin. Engl. Ser.* 19, 387--396.

[36] Chen, S. X. and Tang, C. (2005). Nonparametric Estimation of Value at Risk and the Standard Errors for Financial Returns. *Journal of Financial Econometrics, 3, 227-255*.

[37] Chen, S.X. and Cui, H. J. (2006) On Bartlett Correction of Empirical Likelihood in the Presence of Nuisance Parameters. *Biometrika*, 93, 215-220.

[38] Chen, S. X. and Qin, J. (2006) An Empirical likelihood Method in Mixture Models with Incomplete Classifications, *Statistica Sinica* 16, 1101-1115.

[39] Chen, S.X. and Cui, H. J. (2007) On the Second Order Properties of Empirical Likelihood for Generalized Estimation Equations. *Journal of Econometrics*, 141, 492-516.

[40] Chen, S.X. and J. Gao (2007) An Adaptive Empirical Likelihood Test for Time Series Models. *Journal of Econometrics*, 141, 950-972.

[41] Chen, S. X. and T. Huang (2007) Nonparametric Estimation of Copula Functions. *Canadian Journal of Statistics*, 35, 265-282.

[42] Chen, S.X., J. Gao and Tang, C. Y. (2008) A test for model specification of diffusion processes, *The Annals of Statistics,* 36, 167-198.

[43] Chen, S.X (2008) Nonparametric Estimation of Expected Shortfall, *Journal of Financial Econometrics*, 6, 87-107.

[44] Chen, S. X., Leung, D. Y. H. and J. Qin. (2008) Improved Semiparametric Estimation Using Surrogate Data, *Journal of the Royal Statistical Society, Series B*, 803-823.

[45] Wang, D. and S.X. Chen (2009), Empirical Likelihood for Estimating Equation with Missing Values, *The Annals of Statistics*, 37, 490-517.

[46] Chen, Song Xi and Chiu Min Wong (2009) Smoothed Block Empirical Likelihood for Quantiles of Weakly Dependent Processes, *Statistica Sinica*, 19, 71-82.

[47] Wang, D. and Chen, S. X. (2009): Combining quantitative trait loci analyses and microarray data, an empirical likelihood approach, *Computational Statistics and Data Analysis*, 53, 1661-1673.

[48] C. Yong Tang and Chen, S. X. (2009), Parameter estimation and bias correction of diffusion processes, *Journal of Econometrics*, 149, 65-81.

[49] Chen, S. X., L. Peng and Y-L, Qin (2009) Effects of Dimensionality on empirical likelihood, *Biometrika*, 96, 711–722.

[50] Chen, S. X. and I. Van Keilegom (2009) Empirical Likelihood Test for a Class of Regression Models, *Bernoulli*, 15, 955-976.

[51] Chan, N-H, Chen, S.X., Peng, L. and C. L. Yu (2009), Empirical Likelihood Methods Based on Characteristic Functions with Applications to L\'evy Processes. *Journal of the American Statistical Associatio*n, 104, 1621-1630.

[52] Chen, S. X. and I. Van Keilegom (2009) A review on empirical likelihood for regressions (with discussions), *Test*, 3, 415-447.

[53] Chen, S. X. and Y-L Qin (2010) A Two Sample Test for Ultra High Dimensional Data with Applications to Gene Sets Testing. *The Annals of Statistics*, 38, 808-835.

[54] Chen, S. X., C. Y. Tang and V. T. Mule, jr. (2010) Local post-stratification and diagnostics in Dual System Accuracy and Coverage Evaluation for US Census, *Journal of the American Statistical Associatio*n, *Application and Case Study Section*, 105, 105-119.

[55] Chen, S. X., Delaigle, A. and Hall, P. (2010) Nonparametric estimation for levy-type processes, *Journal of Econometrics*,157, 257-271.

[56] Chen, S.X., Zhang, L-X. and P-S Zhong (2010) Testing high dimensional covariance matrices, *Journal of the American Statistical Associatio*n, 105, 810-819.

[57] Chen, S. X. and P-S Zhong (2010) ANOVA for longitudinal data with missing values. *The Annals of Statistics*, 38, 3630-3659.

[58] Alzghool, R., Y-X Lin and S. X. Chen (2010) Asymptotic Quasi-likelihood Based on Kernel Smoothing for Multivariate Heteroskedastic Models with Correlation, *AMERICAN JOURNAL OF MATHEMATICAL AND MANAGEMENT SCIENCES*, 30, 147-177.

[59] P-S Zhong and S. X. Chen (2011). Tests for High Dimensional Regression Coefficients with Factorial Designs. *Journal of the American Statistical Association*, 106, 260-274.

[60] Chen, S.X. and J. Gao (2011). Simultaneous Specification Test for the Mean and Variance Structures for Nonlinear Time Series Regression. *Econometric Theory*, **27**, 792–843.

[61] Chen, S. X. and C. Y. Tang (2011). Properties of Census Dual System Population Size Estimators. *International Statistical Review*, 79， 336-361.

[62] J.-Y. Chang and S.X. Chen (2011). On the approximate maximum likelihood estimation for diffusion processes. *The Annals of Statistics*, 39， 2820-2851.

[63] Chen, S. X. and C. Y. Tang (2011). Nonparametric Regression with Discrete Covariates and Missing Value. *Statistics and Its Interface*, 4， 463-273.

[64] Li, J. and S. X. Chen (2012). Two Sample Tests for High Dimensional Covariance Matrices, The Annals of Statistics, 40, 908-940

[65] Qiu, Y-M and Chen, S. X. (2012). Test for Bandedness of High Dimensional Covariance Matrices with Bandwidth Estimation, *The Annals of Statistics*, 40, 1285-1314.

[66] Chen, S. X., Peng, L. and C. L. Yu (2013). Parameter Estimation and Model Testing for Markov Processes via Conditional Characteristic Functions, *Bernoulli*, 19, 228-251.

[67] Chen, S. X., Tang, C.Y. and J. Qin (2013). Mann-Whitney Test with Adjustments to Pre-treatment Variables for Missing Values and Observational Study, *Journal of the Royal Statistical Society, Series B*, 75, 81-102.

[68] Chen, S. X. and Van Keilegom, I. (2013) Estimation in semiparametric models with missing data. *Annals of the Institute of Statistical Mathematics*, 65, 785-805.

[69] P-S Zhong, Chen, S. X. and Minya Xu (2013) Tests alternative to higher criticism for high dimensional means under sparsity and column-wise dependence, *The Annals of Statistics*, 41, 2820-2851.

[70] Chen, S.X. and Z. Xu (2013) On smoothing estimation for seasonal time series with long cycles, *Statistics and Its Interface*, 6, 435-447.

[71] Chen, S. X and Z. Xu (2014) On the implied volatility for options -- some reasons to smile and more to correct. *Journal of Econometrics,* 179, 1-15.

[72] J. Chang, Chen, S. X. and Chen, X. (2015) Empirical likelihood of high dimensional estimating equations with dependent data. *Journal of Econometrics*, 185, 283-304.

[73] Y. Qiu and S.X. Chen, (2015) Band Width Selection for High Dimensional Covariance Matrix Estimation. *Journal of the American Statistical Association*, 110, 1160-1174.

[74] Liang, X., T, Zuo, B. Guo, S. Li, H. Zhang, S. Zhang, H. Huang and S. X. Chen. (2015). Assessing Beijing's PM2.5 Pollution: Severity, Weather Impact, APEC and Winter Heating, *Proceedings of the Royal Society A*, 471, 20150257.

[75] Chen, S.X., Lei, L.-H. and Tu, Y-D (2016). Functional Coefficient Moving Average Models with applications to forecasting Chinese CPI, *Statistica Sinica*, 26, 1649-1672.

[76] Guo, B. and S.X. Chen (2016). Tests for High Dimensional Generalized Linear Models. *Journal of the Royal Statistical Society, Series B*. 78，1079–1102

[77] Wang, Y., Tu, Y-D and S. X. Chen (2016) Improving inflation prediction with the quantity theory. *Economics Letters*, 149, 112-115.

[78] Chen, S.X. (2016) Peter Hall's Contribution to the Bootstrap, *The Annals of Statistics*, 44, No. 5, 1821–1836.

[79] Liang, X., Li, S., Zhang, SY, Huang, H. and S.X. Chen (2016). PM2.5 Data Reliability, Consistency and Air Quality Assessment in Five Chinese Cities, *Journal of Geophysical Research—Atmosphere*, 121(17), 10220–10236.

[80] Peng, LH, S.X. Chen and W, Zhou (2016) More Powerful Tests for Sparse High-Dimensional Covariances Matrices, *Journal of Multivariate Analysis*, 149, 124-143.

[81] He, J. and S. X. Chen (2016) Testing Super-Diagonal Structure in High Dimensional Covariance Matrices, *Journal of Econometrics*, 194, 283-297.

[82] Shuyi Zhang, Bin Guo, Anlan Dong, Jing He, Ziping Xu, Song Xi Chen (2017). Cautionary Tales on Air Quality Improvement in Beijing, *Proceedings of the Royal Society A*, 473: 20170457.

[83] Zuo, T. and S. X. Chen (2017). Enhancing Estimation for Interest Rate Diffusion Models with Bond Prices. *Journal of Business and Economics Statistics*, 35:3, 486-498.

[84] Y. Qiu, S.X. Chen, D. Nettleton (2018) Detecting Rare and Faint Signals via Thresholding Maximum Likelihood Estimators. *The Annals of Statistics*, 46， 895-923. .

[85] Chen, L., Guo, B., Huang, J., He, J., Wang, H., Shuyi Zhang, and S.X. Chen (2018). Assessing air-quality in Beijing-Tianjing-Hebei region: the method and mixed tales of PM2.5 and O3. *Atmospheric Environment*, 193, 290-301.

[86] J. He and S. X. Chen (2018) High-Dimensional Two-Sample Covariance Matrix Testing via Super-diagonals, *Statistica Sinica*, 28，2671-2696.

[87] Li, HB, Wu, JW., Wang, AX, Li, X, Chen, SX, Wang, TQ, Amsalu, E., Gao, Q., Luo, YX, Yang, XH., Wang, W, Guo, J., Guo, YM, Guo, XH. (2018). Effects of ambient carbon monoxide on daily hospitalizations for cardiovascular disease: a time-stratified case-crossover

study of 460,938 cases in Beijing, China from 2013 to 2017, *ENVIRONMENTAL HEALTH, 17:82.*

[88] S.X. Chen, J. Li and P.-S. Zhong, (2019) Two-Sample and ANOVA Tests for High Dimensional Means, *The Annals of Statistics*, 47, 1443-1474.

[89] Mao, X., Chen, SX and Wong, R. (2019) Matrix Completion with Covariate Information, *Journal of the American Statistical Association*, 114, 198-210.

[90] Zheng, XY and Chen, SX (2019) Partitioning Structure Learning for Segmented Linear Regression Trees, *Advances in Neural Information Processing Systems* (NeurIPS), 2019.

[91] Shuyi Zhang, Song Xi Chen, Bin Guo, Hengfang Wang, Wei Lin (2020) Regional Air-Quality Assessment That Adjusts for Meteorological Confounding, *Science China Mathematics*, 50, 527-558.

[92] Xu, Z., Chen, S. X. and Wu, X. (2020) Meteorological Change and Impacts on Air Pollution Results from North China, *Journal of Geophysics Research-Atmosphere*, 125 (16), e2020JD032423.

[93] Sun, H., Qiu, Y., Yan, H., Huang, Y., Zhu, Y., Gu, J. and Chen, S.X. (2020) Tracking Reproductivity of COVID-19 Epidemic in China with Varying Coefficient SIR Model (with discussion), *Journal of Data Science*, 18 (3), 455-472.

[94] Wan, Y., Xu, M., Huang, H. and Chen, S.X. (2020) A Spatio-Temporal Model for the Analysis and Prediction of Fine Particulate Matter Concentration in Beijing, *Enviromentrics*, 32 (1), e2648.

[95] Wu, H., Zheng, X., Zhu, J., Lin, W., Zheng, H., Chen, X., Wang, W., Wang, Z., and S. X. Chen (2020). Improving $PM_{2.5}$ Forecasts in China Suing an Initial Error Transport Model, *Environmental Science and Technology*, 54(17), 10493-10501.

[96] Gu, J., Yan, H., Huang, J., Zhu, Y., Sun, H., Qiu, Y. and S. X. Chen (2020), Comparing Containment Measures among Nations by Epidemiological Effects of COVID-19. *National Science Review*, 7 (12), 1847-1851.

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[98] Mao, X-J., Wong, R. K-W and Chen, S. X. (2021) Matrix Completion under Low-Rank Missing Mechanism, *Statistica Sinica*, 31, 2005-2030.

[99] Zhang, S., Chen, S.X. and L. Lu (2020), Inference for Variance Risk Premium, *China Finance Review International*,11, 26-52.

[100] Wu, H., Lin, W., Kong, L., Tang, X., Wang, W. Wang, ZF and S.X. Chen (2021) A Fast Emission Inversion Scheme Based on Ensemble Optimal Interpolation, *Climate and Environmental Research* (in Chiese), 26 (2), 191-201.

[101] Zhang, HM and Chen, S. X. (2021), Concentration Inequalities for Statistical Inference, *Communications in Mathematical Research*, 37, 1-85.

[102] Chang, J-Y., Chen, S.X., Tang, C-Y. and Wu, T-T (2021) High-Dimensional Empirical Likelihood Inference, *Biometrika*, 108, 127-147.

[103] Chen, S.X. and L-H Peng (2021) Distributive Statistical Inference for Massive Data, *The Annals of Statistic*s, 2021, 49(5), 2851-2869.

[104] Zhu, Y.R., Liang, Y.S. and Chen, S.X. (2021) Assessing Local Emission for Air Pollution via Data Experiments, *Atmospheric Environment*, 252, 118323.

[105] Yan, H., Zhu, YR., Gu, J., Huang, YX., Sun, HX., Zhang, XY., Wang, YT., Qiu, YM. and Chen, S.X. (2021). Better Strategies for Containing COVID-19 Pandemic: a Study of 25 Countries via a vSIADR Model, *Proceedings of the Royal Society A*, 476: 20200440.

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Invited Presentations

Multi-level Thresholding Test for High Dimensional Covariance Matrices, Keynote Address, 2018 Annual Meeting of Korea Statistical Society, Seoul.

Air Quality Assessment with Spatial and Temporal Adjustment to Meteorological Confounding, Penn State University, January 2018

Spatial Temporal Adjustment for Air Quality Assessment, Key Note Speaker, 2nd Data Science Conference, Fudan University, Shanghai, China, December 2017.

Peter Hall's Contribution to the Empirical Likelihood, ICSA International Conference, December 2016, Shanghai.

Detecting Rare and Faint Signals via Thresholding Maximum Likelihood Estimators, Conference in Memorial of Professor Peter Hall, University of Melbourne, Dec 2016.

Spatial and Temporal Adjustment for Air Quality Assessment Around Beijing, Colorado State University, Nov, 2016.

Two-Sample Thresholding Tests for High Dimensional Means, in Memorial Conference for Professor Peter Hall, UC Davis, September 2016.

Peter Hall's Contribution to the Bootstrap, Joint Statistical Meeting, August 2016, Chicago.

Tales of Five Chinese Cities: PM2.5 Data Reliability and Compatibility in Air-Quality Assessment. A Cross-Straight Dialogue: Economic Forecast (III), April 2016, Academia Sinica, Taiwan

Assessing Beijing's PM2.5 Pollution: Severity, Weather Impact, APEC and Winter Heating, Wharton School of Business, University of Pennsylvania, Oct 2015.

Assessing Beijing's PM2.5 Pollution: Severity, Weather Impact, APEC and Winter Heating, IMS-China Meeting, Kunming, July, 2015.

Bandwidth Selection for High Dimensional Covariance Estimation, Oct 8th, 2014, University of Toronto.

Bandwidth Selection for High Dimensional Covariance Estimation, July, 2014, University of Melbourne.

Two-Sample Thresholding Tests for High Dimensional Means, IMS Annual Meeting, July 2014, Sydney, Australia.

Two-Sample Thresholding Tests for High Dimensional Means, The 9th ICSA International Conference, Hong Kong Baptist University, December 20-23, 2013.

Modeling and Forecasting CPI of China's Mainland, A conference on Frontier of Statistics and Forecasting, Academia Sinica, Taiwan, December 17-18, 2013.

Extracting Information of Interest Rates from Bond Price, A Conference organized by Shanghai College of Finance, June 2013

Alternative Tests to Higher Critism For High Dimensional Means under Sparsity and Column-Wise Dependence.

KeyNote Address, the 9th Congress of Applied Statistical Soceity of China, July 19th, 2013.

On the implied volatility for options -- some reasons to smile and more to correct, Bendheim Center for Finance, Princeton University, September 2012.

High Dimensional Empirical likelihood for Generalized Estimating equations with Dependent Data, Department of Statistics, University of Illinois, September 20th 2012.

Two Sample Tests for High Dimensional Covariance, International Nonparametric Conference, Greece, June 2012.

On the implied volatility for options -- some reasons to smile and more to correct, Stevanovich Center for Financial Mathematics, University of Chicago, Oct 20th, 2011

On the approximate maximum likelihood estimation for diffusion, Department of Statistics, Columbia University, Sept 26, 2011.

Test for Bandedness of High Dimensional Covariance Matrices, IMS-China Conference, Xian, July 2011; with Yumou Qiu.

On the approximate maximum likelihood estimation for diffusion, Keynote speaker, A conference on financial econometrics and modeling, Singapore Management University, 2011, June.

On the approximate maximum likelihood estimation for diffusion, ICSA International Statistical Conference, Guangzhou, China, December 19-22, 2010.

A two sample test for high dimensional data with application to geneset testing, Chinese Statistical Society Annual Meeting, National Central University, December 16-17, 2010.

Adjusted Mann-Whiteney tests for pre-treatment variables and missing values, National University of Taiwan, December 15, 2010.

Tests for High Dimensional Regression Coefficients with Factorial Designs. Academy Sinica, Taipei, China, December 12-14, 2010.

Parameter Estimation and Bias Correction for Diffusion Processes, A conference in honor of Prof H Tong's 65 Birthday, University of Hong Kong, December, 2009.

Nonparametric Estimation for a Class of Levy Processes, INFORMS meeting, Oct 2009.

A two sample test for high dimensional data with application to geneset testing, IMS-Pacific Rim meeting, July 2009, Seoul, Korea.

Nonparametric Estimation for a Class of Levy Processes, IMS-China meeting, July 2009, Weihai, China.

Parameter Estimation and Model Testing for Markov Processes via Conditional Characteristic Functions, Joint Statistical Meeting 2009, Washington DC.

Empirical likelihood ANOVA for longitunidal data with missing values, November 2008, Department of Statistics, University of Iowa.

A two sample test for high dimensional data with application to geneset testing, October 2008, Department of Statistics, Penn State University

Conditional Characteristic Function Based Parameter Estimation and Model Testing Using Empirical Likelihood. *Modeling and managing Ultra High Frequency Data, An International Conference*, Perth, Autsralia, Feb 13-15 2008.

Conditional Characteristic Function Based Parameter Estimation and Model Testing Using Empirical Likelihood. *Likelihood Methods in Finance conference,* the Bendheim Center for Finance at Princeton University, October 12-13, 2007.

Parameter Estimation and Bias Correction for Diffusion Processes, (With C. Y. Tang) *Likelihood Methods in Finance conference,* the Bendheim Center for Finance at Princeton University, October 12-13, 2007.

Empirical Likelihood Test for a Class of Regression Models, *2007 Joint Statistical Meeting*, Salt Lake City, with I. Van Keilegom.

Improved Semiparametric Estimation with surrogate data, Department of Statistics, University of Minnesota, Sept 12, 2007.

Improved Estimation for Surrogate Outcome Data, the *35th Annual meeting of the Statistical Society of Canada*, St John's, New Foundland, 10-13 June 2007.

Two Lectures on Statistical Inference for Stochastic Processes. *The conference "Inverse Problems in Stochastic Differential Equations ", University of Southern California,* May 22-26, 2007.

Semiparametric Estimation With Missing Values via Empirical Likelihood, *Department of Statistics, University of Wisconsin at Madison*, Oct. 11, 2006.

Estimating equation, missing values and empirical likelihood, (with Dong Wang), An invited talk in 2006 *JSM in Seattle*.

Nonparametric Estimation of Copula Function, *The 2006 International Symposium on Financial Engineering and Risk Management,* Xiamen, China, July 05-06 2006

On bias correction in parameter estimation of diffusion processes, an invited talk and a member of the *International Program Committee of the International Conference on Time*

Series Econometrics, Finance and Risk, at University of Western Australia, June 30- July 01 2006.

A short course on Empirical Likelihood, Institute of Statistique, Univerisite Catholique de Louvain, June-July 2005.

Nonparametric Estimation in Biased Sampling, *2005 Applied Statistics Symposium*, June, Washington DC.

Nonparametric Estimation of Expected Shortfalls, Mathematical Forschungsinstitut Oberwolfach, Nov 14-20th 2004, Oberwolfach, Germany.

On Nonparametric Specification Test for Continuous Time diffusion Models, ICSA International Statistical Conference, July 2004, NUS, Singapore.

Information Recovery in a Study with Surrogate Endpoints. 2004 Applied Statistics Symposium, June, San Diego.

An Empirical Likelihood Goodness-of-fit test for Time Series, Quantitative Methods in Finance 2000, Syndey, Australia, December 8-12.

Empirical Likelihood Confidence Intervals for Local Linear Smoothers, 2000 International Chinese Statistical Conference Applied Statistics Symposium, June 1-3, 2000, Embassy Suites, Hotel, Piscataway, NJ, USA.

Empirical Likelihood for Local Linear Smoothers, Weierstrasse Institute for Applied Analysis and Stochastics, Berlin, 11th November, 1999.

Mark Recapture and Biased Sampling, Royal Statistical Society, East Midlands Branch, 14th Oct 1999.

Statistical Application in Fisheries, Australian Statistical Society, Victoria Branch, September, 1995.