张立新简历

简介： 浙江大学，数学学院，求是特聘教授。

　　主要从事概率极限理论、相依模型、Gauss 过程与 Gauss 逼近、自适应设计及相关领域的研究，相继主持 5 项国家自然科学基金面上项目和 1 项重点项目，发表了学术论文 160 多篇，系列论文发表在 《Annals of Statistics》、《Annals of Probability》、《Annals of Applied Probability》等国际权威刊物上。于 1998 年入选"浙江省跨世纪学术和技术带头人"培养人员、2008 年入选教育部"新世纪优秀人才支持计划"、2010 年获得浙江省自然科学基金杰出青年基金、2012 年获得国家自然科学基金杰出青年基金。现任浙江大学数据科学研究中心副主任、IMS-China 委员会委员、中国现场统计研究会常务理事、浙江省现场统计研究会理事长、浙江省数学会理事。

受教育经历

1993 年 2 月—1995 年 7 月，复旦大学统计与运筹系（与杭州大学联合培养），博士研究生/获博士学位，导师林正炎教授

1990 年 9 月—1992 年 12 月， 杭州大学数学系， 硕士研究生 / 提前攻博，导师林正炎教授

1986 年 9 月—1990 年 7 月， 天津职业技术师范学院数学系，本科/获学士学位

1983 年 9 月—1986 年 7 月， 湖南省望城县第一中学，　　　高中

1980 年 9 月—1983 年 7 月， 湖南省望城县学士中学，　　　初中

研究工作经历

1998 年 9 月—至今，　　　　　　　　浙江大学数学系（数学学院），　　　　教授（期间，1999 被评为博士生导师； 2001-2012 年担任浙江大学统计学研究所副所长、常务副所长、所长；2009.7-2017.9 担任浙江大学数学系副主任、数学科学学院副院长；2013 年起被聘为浙江大学求是特聘教授，2014 年被聘为

杭州市钱江特聘专家（合作单位为浙江大学城市学院））

1997 年 6 月—1998 年 9 月，　　杭州大学数学与信息科学系，　教授

1995 年 9 月—1997 年 5 月，　　杭州大学数学与信息科学系，　博士后

主持或参加科研项目及人才计划项目情况

1. 国家自然科学基金重点项目,，随机环境的概率模型研究（2018.1-2022.12，No. 11731012，250 万）主持

2. 贵州省卫生和计划生育委员会委托项目,贵州省健康医疗大数据中心及体系建设方案（2018.1-2018.12，70 万）主持

3. 科技部 973 课题，三元空间群智计算（2014-11-1 至 2019-11-30，No. 2015CB352302, 76 万/总经费 455 万，主持人吴飞）参加

4. 浙江大学科技创新团队基金，年均 40 万，（2013.1-至今），主持

5. 国家自然科学基金杰出青年基金项目，概率极限理论与自适应设计理论（2013-1-1 至 2016-12-31，196 万，No. 11225104）单独

6. 国家自然科学基金面上项目，高斯逼近及其在自适应设计中的应用（2011-1-1 至 2013-12-31，No. 11071214，26 万）主持

7. 浙江省自然科学基金杰出青年基金项目,多治疗方法自适应设计及非平稳系统的逼近与应用（2010-6-30 至 2014-6-30，No. R6100119，30 万）单独

8. 中央高校基金项目 (2010.8—2010.12, No. 2010QNA3032, 10 万)　单独.

9. 国家自然科学基金面上项目，基于群组信息刷新的非常规突发事件资源配置优化决策研究 (2010.1-2012.12, No. 90924023/G0104) 参加

10. 浙江省自然科学基金杰出青年团队基金，苏中根团队 (2010.1—2012.12，No. R6090034, 30 万)　参加

11. 教育部新世纪人才基金，(2009—2012，50 万) 单独

12. 国家自然科学基金面上项目,非经典自适应设计的极限理论 (2008.1—2010.12，No. 10771192, 24 万) 主持

13. 国家自然科学基金面上项目,几类相依变量的极限理论及其在自适应设计设计和经济模型中的应用 (2005.1—2007.12，No. 10471126, 21 万) 主持

14. 国家自然科学基金面上项目,随机环境中随机变量与随机过程的极限理论

(2001.1—2003.12, No. 10071072, 13 万) 主持

15. 国家自然科学基金面上项目，多参数高斯过程和随机场的极限理论，(1998.1—2000.12， No. 19701011, 5 万) 主持

16. 浙江省跨世纪学术和技术带头人培养规划基金， (1999—2002，2 万) 单独。

主持或参加教学及人才培养项目情况

1. 国家自然科学基金天元基金， 《全国"基础数学"研究生暑期学校》，No.11626022，人民币 70 万， 2016.6 -12，排名 2/4，参加。

2. 国家自然科学基金，《浙江大学数学理科人才基地科研训练与能力提高项目》，No. J1210038，人民币 400 万，2013.1-2017.12，排名 2/9，参加。

3. 国家自然科学基金，《浙江大学数学基地人才培养支撑条件建设项目》，No.J1103103，人民币 200 万，2012.1-2016.12，排名 2/9，参加。

获奖情况

科技进步奖：

1. 孙瑞博、Siu Hung Cheung （香港）、张立新："A generalized drop-the-loser rule for multi-treatment clinical trials"，第九届全国统计科学研究优秀成果奖 二等奖，国家统计局，（2008）

2. 林正炎、张立新、苏中根："概率极限理论及其在 Gauss 过程轨道性质方面的应用"， 教育部提名国家科学技术奖自然科学奖 二等奖 （2003）

教学成果奖：

1. 浙江省教学成果奖二等奖，《依托优势学科，创新"数学与应用数学"特色专业拔尖人才培养模式》，排名 3/5，2016.

2. 浙江大学教学成果奖二等奖，《依托数学国家理科人才培养基地，构建数学创新能力培养模式的探索与实践》，排名 1/6，2016.

3. 浙江大学教学成果奖一等奖，《深化"数学专业"特色建设，创新"拔尖人才"培养模式》，排名 2/4， 2012

4. 浙江大学教学成果奖二等奖，《基于创新能力培养的数学教学质量管理模式建立及应用》，排名 5/5，2012.

代表性论著

专著： 林正炎、陆传荣、 张立新 (2001). 高斯过程的轨道性质. 科学出版社 (中文).

　　Lin, Z.Y., Lu, C. R. and Zhang, L. X. (2001). Sample Path Properties of Gaussian Processes.Press of Zhejiang University, Hangzhou (in English).

教材： 林正炎、苏中根、张立新(2014). 概率论（"十二五"普通高等教育国家级规划教材），浙江大学出版社。

论文：

1. Zhang, L.-X.(2016) Central limit theorems of a recursive stochastic algorithm with applications to adaptive designs, *Annals of Applied Probability,* Vol. 26(6): 3630-3658

2. Ma, W., Hu, F. and Zhang, L.X. (2015) . Testing Hypotheses of Covariate-Adaptive Randomized Clinical Trials. *Journal of the American Statistical Association*, Vol. 110(510): 669-680.

3. Zhang, L.X., Hu, F., Cheung, S.H. and Chan, W.S. (2014)　Asymptotic properties of multi-color randomly reinforced Polya urns. *Advances in Applied Probability*. Vol 46: 585-602

4. Zhang, L.X., Hu, F., Cheung, S.H. and Chan, W.S. (2011).　Immigrated urn models -- theoretical properties and applications,　*Annals of Statistics*　Vol. 39(1): 643–671.

5. Hu, F., Zhang, L.X. and He,X.M.. (2009). Efficient randomized adaptive designs,　*Annals of Statistics*, Vol. 37, No. 5A, 2543–2560.

6. Zhang, L.X., Hu, F., Cheung, S.H. and Chan, W.S. (2007). Asymptotic properties of covariate-adjusted response-adaptive designs,　*Annals of Statistics*, Vol. 35(3):1166-1182

7. Zhang, L.X., Chan, W.S., Cheung. S.H. and Hu, F. (2006). A generalized urn model for clinical trials with delayed responses. *Statistica Sinica*, Vol.17:387-409.

8. Zhang, L. X., Hu, F. and Cheung, S. H. (2006) Asymptotic theorems of sequential estimation-adjusted urn models for clinical trials, *Annals of Applied Probability*, Vol.16(1): 340-369.

9. Hu, F. and Zhang, L. X. (2004). Asymptotic properties for doubly adaptive biased coin designs of multi-treatment clinical trials. *Annals of Statistics*, Vol.32(1): 268-301.

10. Hu, F. and Zhang, L. X. (2004). The asymptotic normality of urn models for clinical trials with delayed response. *Bernoulli*, Vol.10 (3): 447-463.

11. Bai, Z. D., Hu, F. and Zhang, L. X. (2002). The Gaussian approximation theorems for urn models and their applications. *Annals of Applied Probability,* Vol. 12:1149-1173.

12. Zhang, L. X. (2001). A Strassen's law of the iterated logarithm for negatively associated random vectors. *Stoch. Processes Their Appl.*, Vol.95: 311-328.

13. Zhang, L. X. (1997). On the fractal nature of increments of lp-valued Gaussian processes. *Stoch. Processes Their Appl.,* Vol. 71:91—110.

14. Zhang, L. X. (1997). Strong approximation theorems for geometrically weighted random series and their applications. *Annals of Probability,* Vol. 25: 1621—1635.

15. Zhang, L. X. (1996). Two different kinds of liminfs on the LIL for two-parameter Wiener processes. *Stoch. Processes Their Appl.*, Vol. 63: 175—188.

论著目录

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165. XU Jiapan and ZHANG Li-Xin. Three Series Theorem for Independent Random Variables under Sub-linear Expectations with Applications, *Acta Mathematica Sinica-English Series* (accepted)

164. LIU Zhongqiang, HU Feifang and ZHANG LI-Xin. Nonparametric response-adaptive randomization for continuous responses. *Pharmaceutical Statistics,* https://doi.org/10.1002/pst.1900

163. WU Yi, WANG Xuejun and ZHANG Li-Xin. On the asymptotic approximation of inverse moment under sub-linear expectations, *J. Math. Anal. Appl.* Vol. 468(2018): 182–196. https://doi.org/10.1016/j.jmaa.2018.08.010

162. ZANG Qingpei and ZHANG Li-Xin. Asymptotic behaviour of the trajectory fitting estimator for reflected Ornstein–Uhlenbeck Processes, *Journal of Theoretical Probability*, https://doi.org/10.1007/s10959-017-0796-7 (accepted)

161. ZHANG LI-Xin and LIN Jinghang. Marcinkiewicz's strong law of large numbers for nonlinear expectations, *Statistics and Probability Letters*, Vol.137: 269–276

160. LIU Guangying, ZHANG Li-Xin and WANG Min. Estimation of the Hurst parameter in the simultaneous presence of jumps and noise. *Statistics,* Vol.52(5):1156-1192. DOI: 10.1080/02331888.2018.1500578

2017

159. LIN Zhengyan and ZHANG Li-Xin. Convergence to a self-normalized G-Brownian motion, *Probability, Uncertainty and Quantitative Risk*,Vol. 2(4). doi:10.1186/s41546-017-0013-8

158. LIU, Guangying; ZHANG, Li-Xin and FANG, Xinian. Multipower variation from generalized difference for fractional integral processes with jumps, *Communications in Statistics-Theory and Methods*, Vol.46(19): 9662-9678

157. ZHANG, Yang and ZHANG, Li-Xin. Limit theorems for dependent Bernoulli variables with statistical inference, *Communications in Statistics-Theory and Methods*, Vol.46(4): 1551-1559

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156. ZHANG Li-Xin. Central limit theorems of a recursive stochastic algorithm with applications to adaptive designs, *Annals of Applied Probability,* Vol. 26(6): 3630-3658.

155. ZHANG Li-Xin. Self-normalized moderate deviation and laws of the iterated logarithm

under G-expectation, *Communications in Mathematics and Statistics,* Vol.4: 229–263.

154. ZHANG Li-Xin. Exponential inequalities under the sub-linearexpectations with applications to laws of the iterated logarithm，*Science in China-Mathematics* Vol. 59(12):2503~2526

153. ZHANG Li-Xin. Rosenthal's inequalities for independent and negatively dependent random variables under sub-linear expectations with applications, *Science in China-Mathematics* Vol. 59(4):751-768. DOI: 10.1007/s11425-015-5105-2

152. ZANG Qingpei and ZHANG Li-Xin. Parameter estimation for generalized diffusion processes with reflected boundary*, Science in China-Mathematics* Vol. 59(6): 1163–1174, doi: 10.1007/s11425-015-5112-3

151. ZANG Qingpei and ZHANG Li-Xin. A general lower bound of parameter estimation for reflected Ornstein–Uhlenbeck processes. *Journal of Applied Probability,* Vol.53(1): 22-32. DOI: 10.1017/jpr.2015.5

2015

150. ZHANG Li-Xin. Donsker's Invariance principle under the sub-linear expectation with an application to Chung's law of the iterated logarithm, *Communications in Mathematics and Statistics,* Vol. 3 (2): 187-214.

149. MA Wei, HU Feifang and ZHANG Li-Xin. Testing Hypotheses of Covariate-Adaptive Randomized Clinical Trials. *Journal of the American Statistical Association*, Vol. 110(510): 669-680.

148. ZHANG Li-Xin. Response-adaptive randomization: an overview of designs and asymptotic theory, *Modern Adaptive Randomized Clinical Trials--Statistical and Practical Aspects*, Edited by O. Sverdlov, pp 221-250, Chapman & Hall/CRC Biostatistics Series, CRC Press, 2015.

147. HU Feifang., HU Yanqing, MA Wei, ZHANG Li-Xin and ZHU Hongjian . Statistical

inference of adaptive randomized clinical trials for personalized medicine. *Clinical Investigation, Vol. 5(4), 415–425.*

146. CHAN Waisum, CHEUNG Siuhung, CHOW Waikit and ZHANG Li-Xin. A robust test for threshold-type non-linearity in multivariate time-series analysis, *Journal of Forecasting.*Vol.34(6): 441-454

145. ZHANG Yang and ZHANG Li-Xin (2015). On the almost sure invariance principle for dependent Bernoulli random variables. *Statistics & Probability Letters,* Vol. 107: 264-271

144. ZHANG Li-Xin and ZHANG Yang (2015). Asymptotics for a class of dependent random variables, *Stattistics & Probability Letters*, Vol. 105: 47-56.

143. CHEN Yingyu and ZHANG Li-Xin (2015). Local Linear Estimation of Second-order Jump-diffusion Model. *Communications in Statistics-Theory and Methods.* Vol. 44(18): 3903-3920. DOI: 10.1080/03610926.2013.788718

142. 陈颖瑜 & 张立新, 随机采样下随机微分方程 Milstein 方法的渐近误差. *中国科学.数学,* Vol. 45：287-300， doi:10.1360/012015-9

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141. ZHANG Li-Xin, HU Feifang, CHEUNG Siuhung and CHAN Waisum. Asymptotic properties of multi-color randomly reinforced Polya urns. *Advances in Applied Probability*．Vol. 46:585-602.

140. ZHANG Li-Xin. A Gaussian process approximation for two-color randomly reinforced urns. *Electronic Journal of Probability*, Vol. 19, no. 86, 1–19. ISSN: 1083-6489

139. CHEUNG Siuhung, ZHANG Li-Xin, HU Feifang and CHAN Waisum, Covariate-adjusted response-adaptive designs for generalized linear models, *Journal of Statistical Planning and Inference*, Vol. 149: 152-161.

138. HUANG Chu and ZHANG Li-Xin. Bahadur Representation of Linear Kernel Quantile

Estimator for Stationary Processes. ***Communications in Statistics-Theory and Methods.*** Vol. 43(22): 4669-4678. DOI: 10.1080/03610926.2012.736582

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137.   ZHANG Zhongyang and ZHANG Li-Xin. Scaling limits for one-dimensional long-range percolation: Using the corrector method, ***Statistics & Probability Letters,*** Vol. 83 (11): 2459-2466

136. ZHU Yunzhou, ZHANG Li-Xin and ZHANG Yi. Optimal reinsurance under the Haezendonck risk measure, ***Statistics & Probability Letters,*** Vol.83(4): 1111-1116. DOI: 10.1016/j.spl.2013.01.008

135.   XIAO Xiao-Yong, ZHANG Li-Xin and YIN Hong-Wei. Precise rates in the generalized law of the iterated logarithm, ***Statistics & Probability Letters***, Vol.83(2): 616-623. DOI: 10.1016/j.spl.2012.11.005

134. WANG Yunyan and ZHANG Li-Xin. Local linear estimation for stochastic processes driven by α-stable L\'evy motion. ***Statistical Inference for Stochastic Processes.*** Vol.16(2):161-171

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133. ZHANG Li-Xin, The Gaussian approximation for generalized Friedman's urn model with heterogeneous and unbalanced updating. ***Science China-Mathematics***. Vol.55(11): 2379-2404. DOI: 10.1007/s11425-012-4526-4

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129. 王允艳, 张立新&王汉超. 二阶扩散模型的经验似然推断. *中国科学.数学,* Vol.42(8): 803-820

128. 傅可昂& 张立新. phi-混合序列 Strassen 重对数律的一个推广及其应用. *数学学报.* Vol. 55(2):193-200.

127. 傅可昂& 张立新. B 值强混合随机变量几何加权级数的广义重对数律. *数学年刊. A 辑.* Vol 33A(1):17-26.

2011

126. ZHANG Li-Xin, HU Feifang, CHUENG Sui Hung and CHAN Wai Sum. Immigrated urn models -- theoretical properties and applications, *Annals of Statistics* Vol. 39(1): 643–671. DOI: 10.1214/10-AOS851

125. HUANG Chu, WANG Hanchao and ZHANG Li-Xin. Berry-Esseen bounds for kernel estimates of stationary processes. *Journal of Statistical Planning and Inference*, Vol.141 (3): 1290-1296. DOI: 10.1016/j.jspi.2010.09.029

124. YANG Xiaorong, FU Ke-Ang and ZHANG Li-Xin. Asymptotic of the Lr-norm of density estimators in the autoregressive time series. *Statistics*, Vol. 45(2):163-178. DOI: 10.1080/02331880903445162

123. FU Ke Ang and ZHANG Li-Xin. LIL behavior for B-valued strong mixing random variables. *Science China-Mathematics*, Vol.54 (4): 785-792. DOI: 10.1007/s11425-011-4196-7

122. YU Yi-bin, ZHANAG Li-Xin and ZHANG Yi. Joint and supremum distributions in the compound binomial model with Markovian environment. *Applied-Mathematics-A Journal of*

Chinese University Series B,   Vol.26(3): 265-279.

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121. CHEN Jia, LI Degui and ZHANG Li-Xin. Robust estimation in a nonlinear cointegration model. *Journal of Multivariate Analysis*, Vol. 101(3):706-717.

120. CHEN Jia and ZHANG Li-Xin. Local linear M-estimation for spatial processes in fixed-design models, *Metrika*, Vol. 71(3):319-340.

119. FU Keang and ZHANG Li-Xin. Some Limit Theorems for Linear Processes Generated by Symmetrically Exchangeable Random Variables. *Stochastic Analysis and Applications*, Vol. 28(1): 1-7.

118. FU Keang and ZHANG Li-Xin. Characterization of LIL Behavior for Non-Degenerate B-Valued U-Statistics. *Communications in Statistics-Theory and Methods*, Vol. 39(7): 1258-1269.

117. LI Yunxia; XU Jianjun and ZHANG Li-Xin. Testing for changes in the mean or variance of long memory processes. *Acta Mathematica Sinica-English Series*, Vol. 26(8): 1591-1600 .

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115. CHEN Youyou and ZHANG Li-Xin. Empirical Euclidean likelihood for general estimating equations under association dependence. *Applied Mathematics-A Journal of Chinese University Series B*, Vol. 25 (4): 437-446.

114. CHEN Youyou and ZHANG Li-Xin. Second Moment Convergence Rates for Uniform Empirical Processes. *Journal of Inequalities and Applications:* Art. No. 972324 2010, ISSN: 1025-5834. DOI: 10.1155/2010/972324.

2009

113. HU Feifang, ZHANG Li-Xin and HE Xuming. Efficient randomized adaptive designs, *Annals of Statistics*, Vol. 37 (5A): 2543- 2560, 2009.

112. HUNG King Chi, CHEUNG Siu Hung, CHAN Wai-Sum and ZHANG Li-Xin. On a robust test for SETAR-type non-Linearity in time series analysis, *Journal of Forecasting*, Vol. 28 (5): 445-464, 2009.

111. CHAN WaiSum, ZHANG Li-Xin and CHEUNG SiuHung. Temporal aggregation of Markov switching financial return models, *Applied Stochastic Models in Business and Industry*, Vol 25 (3): 359-383, 2009 .

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109. ZHANG Li-Xin and HU Feifang. The Gaussian approximation for multi-color generalized Friedman's urn model, *Scinece in China Series A*, Vol. 52 (6): 1305-1326 , 2009.

108. ZHANG Li-Xin and HU Feifang. A new family of covariate-adjusted response adaptive designs and their properties, *Appl. Math. J. Chinese Univ.* Vol. 24(1), 1-13, 2009.

107. FU Keang and ZHANG Li-Xin. A general LIL for trimmed sums of random fields in Banach spaces, *Acta Mathematica Hungarica*, Vol.122 (1-2): 91-103, 2009

106. FU Keang and ZHANG Li-Xin. Precise rates in the law of the logarithm for the moment convergence in Hilbert spaces, *Acta Mathematics Sinica, English Series.* Vol.25 (2): 191-208, 2009. .

105. CHEN Jia and ZHANG Li-Xin. Asymptotic properties of nonparametric M-estimation for mixing functional data, *Journal of Statistical Planning and Inference,* *Vol.*139(2), 533-546, 2009.

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104.   YANG Xiaorong and ZHANG Li-Xin. A note on self-normalized Dickey-Fuller test for unit root in autoregressive time series with GARCH errors, *Appl. Math. J. Chinese Univ. Ser B.* Vol.23(2): 197- 201, 2008

103. HU Feifang, ZHANG Li-Xin, CHEUNG SiuHung and CHAN WaiSum. Doubly adaptive biased coin designs with delayed responses, *The Canadian Journal of Statistics*, Vol. 36, 6 (4): 541-559, 2008.

102.   FU Ke-Ang and ZHANG Li-Xin. Strong limit theorems for random sets and fuzzy random sets with slowly varying weights. *Information Science*, Vol.178 (12):2648-2660, 2008.

101.   FU Ke-Ang and ZHANG Li-Xin. Strong laws of large numbers for arrays of rowwise independent random compact sets and fuzzy random sets, , *Fuzzy Sets and Systems*, Vol.159(24) : 3360- 3368, 2008

100.   CHAN Wai Sum, CHEUNG SiuHung，ZHANG Li-Xin and Wu,K.H. Temporal aggregation of equity return time-series models, *Mathematics and Computers in Simulation*, Vol. 78, 172-180, 2008.

99.   PANG Tian-xiao, ZHANG Li-Xin and WANG Han-feng. Precise asymptotics in the self-normalized law of the iterated logarithm, *Journal of Mathematical Analysis and Application,* Vol 340 (2):1249-1262, 2008

98.   FU Ke-Ang, LIU Weidong and ZHANG Li-Xin. Precise asymptotics for the first moment of the error variance estimator in linear models, *Applied Mathematics Letters*, Vol.21 (6):641-647, 2008.

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