List of Publications until 2021
LIU Quansheng

quansheng.liu@univ-ubs.fr

A1. Papers in international journals with review
Articles dans les revues internationales avec comité de lecture

2022

1. Ion Grama, Quansheng Liu, Erwan Pin. Convergence in L_p for a supercritical multi-type branching process in a random environment. Proceedings of the Steklov Institute of Mathematics, 316 (2022), 1-26. See also hal-02934079
2. Yanqing Wang*; Quansheng Liu, Xiequan Fan, Cramér's large deviation expansion for a supercritical branching process with immigration in a random environment (in Chinese), Acta Math. Sin. Chi. Ser., 2022, 1-14.

2021

3. Ion Grama, Quansheng Liu and Erwan Pin. A Kesten-Stigum type theorem for a supercritical multi-type branching process in a random environment. Ann. Appl. Probab. (2021+), minor revision submitted. Online: hal-02878026.
4. Hui Xiao, Ion Grama, Quansheng Liu. Berry–Esseen bound and precise moderate deviations for products of random matrices. J. Eur. Math. Soc., in press; online : 2021, 1-60. DOI 10.4171/JEMS/1142
5. Hui Xiao, Ion Grama, Quansheng Liu. Berry–Esseen bounds and moderate deviations for random walks on GLd(R). Stochastic Processes and their Applications 142 (2021) 293–318. https://doi.org/10.1016/j.spa.2021.08.005
6. Yanqing Wang; Quansheng Liu. Asymptotic properties of a supercritical branching process with immigration in a random environment. Stoch. Qual. Control 36 (2021), no. 2, 145–155. https://doi.org/10.1515/eqc-2021-0030
7. Yanqing Wang; Quansheng Liu. Berry-Esseen's bound for a supercritical branching process with immigration in a random environment. Scientia Sinica Math., 51 (2021), no.5, pp 751-762. https://doi.org/10.1360/SSM-2019-0206
8. Zhiqiang Gao, Quansheng Liu. Asymptotic expansions in the central limit theorem for a branching Wiener process. Sci. China Math. 64 (2021), no.12, 2759-2774. Online: https://doi.org/10.1007/s11425-020-1776-4
9. Qiyu Jin, Ion Grama, Quansheng Liu. Poisson shot noise removal by an oracular non-local algorithm. Journal of Mathematical Imaging and Vision, 63 (2021) no. 7, 855-874. https://doi.org/10.1007/s10851-021-01033-3

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10. Hui Xiao, Ion Grama, Quansheng Liu. Precise large deviation asymptotics for products of random matrices. Stochastic Processes and their Applications 130 (2020), no.9, 5213-5242. ⟨hal-02173735⟩
11. Liang, Xingang; Liu, Quansheng. Regular variation of fixed points of the smoothing transform. Stochastic Process. Appl. 130 (2020) 4104-4140. On line: https://doi.org/10.1016/j.spa.2019.11.011
12. Fan, Xiequan; Hu, Haijuan; Liu, Quansheng. Uniform Cramér moderate deviations and Berry-Esseen bounds for a supercritical branching process in a random environment. Front. Math. China 15, 891–914 (2020). https://doi.org/10.1007/s11464-020-0868-3 x
13. Fan, Xiequan; Grama, Ion; Liu, Quansheng; Shao, Qi-Man. Self-normalized Cramér type moderate deviations for stationary sequences and applications. Stochastic Proc. Appl. 130 (2020) 5124-5148. https://doi.org/10.1016/j.spa.2020.03.001
14. Fan, Xuequan; Grama, Ion ; Liu, Quansheng. Cramér moderate deviation expansion for martingales with one-sided Sakhanenko's condition and its applications, Journal of Theoretical Probability 33 (2020) 749-787. https://doi.org/10.1007/s10959-019-00949-2

15. Jin, Qiyu; Bai, Li; Grama, Ion; Liu, Quansheng; Yang, Jie. Removing random-valued impulse noise with reliable weight. Inverse Problems & Imaging. 2020, 14(2): 171-203. doi: 10.3934/ipi.2020009.

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17. Fan, Xiequan; Grama, Ion; Liu, Quansheng; Shao, Qi-Man. Self-normalized Cramer type moderate deviations for martingales. Bernoulli 25 (2019), 4A, 2793-2823.
18. Li, Yingqiu; Liu, Quansheng; Peng, Xuelian. Harmonic moments, large and moderate deviation principles for Mandelbrot's cascade in a random environment. Statist. Probab. Lett. 147 (2019) 57-65. https://doi.org/10.1016/j.spl.2018.10.002
19. Wang Yanqing ; Li Xu ; Liu Quansheng. Weighted moments of solutions of the stochastic linear recursive distributional equation and applications. Scientia Sinica Math., 49 (2019), no.11, 1687-1706.
20. Wang, Yuejiao; Liu, Zaiming; Liu, Quansheng; Li, Yingqiu. Asymptotic properties of a branching random walk with a random environment in time. Acta Math. Scientia, 39 (2019), no.5, 1345-1362.
21. Wang Yuejiao; Li Yingqiu; Liu Quansheng; Liu Zaiming. Quenched weighted moments of a supercritical branching process in a random environment. Asian J. Math. 23 (2019), 969-984.

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22. Gao, Zhiqiang; Liu, Quansheng*. Second and third orders asymptotic expansions for the distribution of particles in a branching random walk with a random environment in time. Bernoulli 24 (2018), no.1, 772-800. http://dx.doi.org/10.3150/16-BEJ895.
23. Hu, Haijuan; Liu, Quansheng; Froment, Jacques. A note on patch-based low-rank minimization for fast image denoising. J. Vis. Commun. Image R., 50 (2018), 100-110.
24. Jin Q.; Grama I; Liu Q*. Convergence theorems for the Non-Local Means Filter. Inverse Problems and Imaging, 12 (2018), no.4, 853-881. doi: 10.3934/ipi.2018036 Grants: Li,

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25. Comets, Francis; Liu, Quansheng. Rate of convergence for polymers in a weak disorder. J. Math. Anal. Appl. 455 (2017) 312-335. http://dx.doi.org/10.1016/j.jmaa.2017.05.043
26. Fan, X.; Grama, I.; Liu, Q. Deviation inequalities for martingales with applications. J. Math. Anal. Appl. 448 (2017) 538-566.
27. Fan, X.; Grama, I., Liu,Q. Non-uniform Berry–Esseen bounds for martingales with applications to statistical estimation. Statistics: A Journal of Theoretical and Applied Statistics, 51 (2017), no.1, 105-122.
28. Fan, X.; Grama, I.; Liu, Q. Martingale inequalities of type Dzhaparidze and van Zanten. Statistics: A Journal of Theoretical and Applied Statistics, 51 (2017), no. 6, 1200–1213.
29. Grama, I.; Liu, Q.; Miqueu, E. Harmonic moments and large deviations for a supercritical branching process in a random environment. Electron. J. Probab. 22 (2017), no. 99, 1–23.
30. Grama, I.; Liu, Q.; Miqueu, E. Berry-Esseen's bound and Cramer's large deviation expansion for a supercritical branching process in a random environment. Stochastic Process. Appl. 127 (2017) 1255-1281. http://dx.doi.org/10.1016/j.spa.2016.07.014
31. Jin Q; Grama I; Liu Q.* Optimal Weights Mixed Filter for removing mixture of Gaussian and impulse noises. PLoS ONE 12 (2017), no. 7: e0179051. 1-18. https://doi.org/10.1371/journal.pone.0179051
32. Jin, Qiyu; Grama,Ion; Kervrann, Charles; Liu, Quansheng. Nonlocal Means and Optimal Weights for Noise Removal. SIAM J. Imaging Sciences 10 (2017), no.4, 1878-1920.
33. Wang Yanqing; Liu Quansheng. Limit theorems for a supercritical branching process with immigration in a random environment. Sci. China, Math. 60 (2017), no. 12, 2481–2502. doi: 10.1007/s11425-016-9017-7
34. Wang, Y.; Liu, Z.; Li, Y.; Liu, Q.*. On the concept of subcriticality and criticality and the

ratio theorem for a branching process in a random environment. Statistics and Probability Letters. 2017, 97-103. DOI: 10.1016/j.spl.2017.02.023

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35. Gao, Z.; Liu, Q. Exact convergence rates in central limit theorems for a branching random walk with a random environment in time. Stochastic Process. Appl. 126 (2016), 2634-2664.
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37. Jin,Q.; Grama,I.; Liu,Q.*. Controlled Total Variation regularization for image deconvolution. Imaging Science Journal，64 (2016)，no.2, 68-81. DOI:10.1080/13682199.2015.1123793
38. Hu, H.; Li, B.; Liu, Q.*. Removing Mixture of Gaussian and Impulse Noise by Patch-Based Weighted Means. J. Sci. Comput. (2016) 67:103–129. DOI 10.1007/s10915-015-0073-9

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39. Xiangang Liang, Quansheng Liu. Weighted moments for Mandelbrot's martingales. Electron. Commun. Probab. **20** (2015), no. 85, 1–12. DOI: 10.1214/ECP.v20-4443.
40. X. Fan, I. Grama, Q. Liu. Sharp large deviation results for sums of independent random variables. Science China Mathematics, 58 (2015), no. 9, 1939-1958. doi: 10.1007/s11425-015-5049-6.
41. X. Fan, I. Grama, Q. Liu. Exponential inequalities for martingales with applications. Electron. J. Probab. 20 (2015), no. 1, 1–22.
42. V.A. Vatutin, Q.Liu. Limit theorems for decomposable branching processes in random environment. Adv. Appl. Prob., 52 (2015) , 877-893. See also arxiv: 1403.0746.
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46. Chunmao HUANG, Xingang LIANG, Quansheng LIU. Branching random walks with random environments in time. Front. Math. China 2014, 9(4): 835–842. DOI 10.1007/s11464-014-0407-1.
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48. Zhihua Xia, X. Sun, Yun-Qing Shi, Quansheng Liu, Neal N. Xiong and Xinhui Wang. Steganalysis of LSB Matching Using Differences between Nonadjacent Pixels. Multimedia Tools and Applications, November 2014; doi:10.1007/s11042-014-2381-8
49. Junli Zhao, Cuiting Liu, Zhongke Wu, Fuqing Duan, Kang Wang, Taorui Jia and Quansheng Liu. Craniofacial Reconstruction Evaluation by Geodesic Network.. Computational and Mathematical Methods in Medicine. Volume 2014 (2014), Article ID 943647, 9 pages, http://dx.doi.org/10.1155/2014/943647
50. Hao Shunli; Liu Quansheng. Convergence rates in the law of large numbers for arrays of martingale differences. J. Math. Anal. Appl. 417 (2014) 733–773. doi:10.1016/j.jmaa.2014.03.049
51. Gao,Zhiqiang; Liu, Quansheng; Wang, Hesong. Central limit theorems for a branching random walk with a random environment in time. Acta Mathematica Scientia, 2014,34B(2):501–512
52. Chen,Beijing ; Liu, Quansheng ; Sun, Xinming ; Li, Xu ; Shu, Huazhong. Removing Gaussian noise for color images by quaternion representation and optimization of weights in non-local means filter. IET Image Processing, 58 (2014), 548-573.
53. Huang, Chunmao; Liu, Quansheng. Convergence rates for a supercritical branching process in a random environment. Markov Processes and Related Fields, 20 (2014), 265-285.

54. Brigitte Chauvin, Quansheng Liu, Nicolas Pouyanne. Limit distributions for multitype branching processes of m-ary search trees. Ann. Inst. Henri Poincaré. 50 (2014), No. 2, 628–654. DOI: 10.1214/12-AIHP518. See also arxiv: 1112.0256
55. Jin, Q., Grama, I. and Liu Q. A new Poisson noise filter based on weights optimization. 26 pages, J Sci. Comput. (2014) 58, 549-573. DOI 10.1007/s10915-013-9743-7 Cf. also: arXiv:1201.5968

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56. Beijing Chen, Hui Dai, Quansheng Liu, Huazhong Shu: Poisson noise removal for color images using quaternion representation. J. Southeast Univ. (Natural Sci. Ed.), vol. 43, no. 4 (2013) 717-723.
57. Liang, Xingang; Liu, Quansheng; Weighted moments for the limit of a normalized supercritical Galton–Watson process. *C. R. Math. Acad. Sci. Paris* 351 (2013), no. 19-20, 769–773.
58. X. Liang, Q. Liu. Weighted moments of the limit of a branching process in a random environment. Proceedings of Steklov Institue of Mathematics, 282 (2013), no.1, 127-145. DOI: 10.1134/S0081543813060126
59. Fan, Xiequan; Grama, Ion; Liu, Quansheng; Cramér large deviation expansions for martingales under Bernstein's condition. *Stochastic Process. Appl.* 123 (2013), no. 11, 3919–3942.
60. Fan, Xiequan; Grama, Ion; Liu, Quansheng; Sharp large deviations under Bernstein's condition. *C. R. Math. Acad. Sci. Paris* 351 (2013), no. 21-22, 845–848.
61. V.A. Vatutin, Q.Liu. Critical branching process with two types of particles evolving in asynchronous random environments, TVP, 57 (2012), No 2, pp. 225-256; Theory of Probability and its Applications, 57 (2013), no.2, 279-305.

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65. Shunli Hao and Quansheng Liu. Baum–Katz type theorems for martingale arrays. C. R. Acad. Sci. Paris, Ser. I 350 (2012) 91-96.

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66. Chunmao Huang and Quansheng Liu. Harmonic moments and large deviations for a supercritical branching process in a random environment. C. R. Acad. Sci. Paris, Ser. I 349 (2011) 1199-1202.
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69. Xingang Liang, Quansheng Liu. Tail behavior of laws stable by random weighted mean. C. R. Acad. Sci. Paris, Ser. I 349 (2011) 347-352.
70. Bing Li, Quansheng Liu, Jiawei Xu, Xiaojun Luo. A new method for removing mixed noises. Sci. China Series F: Information Sciences, vol. 54, no.1 (2011), 51-59.

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74. Xiaojun Luo, Bing Li, Quansheng Liu, Jiawei Xu. A new linear mixed filter.Computer engineering and applications, vol. 44, no.17, pp.172-174 and 190, 2008.
75. Yingqiu Li, Xu Li, Quansheng Liu. A random walk with a branching system in random environments. Sci. China, Series A: mathematics, vol. 50, no. 5, 2007, 698-704.
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77. Quansheng Liu, Emmanuel Rio and Alain Rouault. Limit theorems for multiplicative processes. Journal of Theoretical Probability, Vol. 16, No. 4, 2003, 971-1014.
78. Yves Guivarc'h, Emile Le Page and Quansheng Liu. Normalisation d'un processus de branchement critique dans un environnement aléatoire, C.R. Acad. Sci. Paris, Ser. I 337 (2003) 603-608.
79. Quansheng Liu. An extension of a functional equation of Mandelbrot and Poincaré. Asian J. Math. 6 (2002), 145-168.
80. Quansheng Liu. Asymptotic properties and absolute continuity of laws stable by random weighted mean. Stoch. Proc. Appl. (2001), 83-107. [25 pages]
81. Quansheng Liu. Local dimensions of the branching measure on a Galton-Watson tree. Ann. Inst. Henri Poincaré, 37, 2 (2001) 195-222. [28 pages]
82. Yves Guivarc'h and Quansheng Liu. Propriétés asymptotiques des processus de branchement en environnement aléatoire. C. R. Acad. Sci. Paris, Série I, t. 332 (2001), 339-344.
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85. Quansheng Liu and Alain Rouault. Limit theorems for Mandelbrot's multiplicative cascades. Ann. Appl. Prob. 10 (2000) 218-239.
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89. Quansheng Liu and N.R.Shieh. A uniform limit theorem for the branching measure on a Galton- Watson tree. Asian J. Math. Vol. 3, No. 2 (1999), 381-386.
90. Quansheng Liu. Fixed points of a generalized smoothing transformation and applications to branching random walks. Adv. Appl. Prob. 30 (1998), 85-112.
91. Quansheng Liu. Sur une équation fonctionnelle et ses applications: une extension du théorème de Kesten -Stigum concernant des processus de branchement. Adv. Appl. Prob. 29 (1997), 353-376.
92. Quansheng Liu. The exact Hausdorff dimension of a branching set. Prob. Th. Rel. Fields, 104 (1996), 515-538.
93. Quansheng Liu. On the survival probability of a branching process in a random environment. Ann. Inst. Henri Poincaré, vol. 32, no.1 (1996), pp.1-10.
94. Dao-Chun Sun and Quan-Sheng Liu. On the value distribution of some random analytic functions, J. Math., Vol. 10, no. 3 (1990), pp.286-298.
95. Quan- Sheng Liu. On the Ritt order of an entire function defined by an L-Dirichletian element, Approx.Theory & its Appl. 5 (3) (1989) 55-67.
96. Quan-Sheng Liu. On the growth of some random hyperdirichlet series, Chin. Ann. of Math., 10 B (2) (1989) 214-220.
97. Quan-Sheng Liu. On the growth of entire functions defined by B-Dirichletian series, J. Wuhan Univ. (Natural Sci.ed.), no.4 (1989) 1-7.
98. Dao-Chun Sun and Quan-Sheng Liu. On the value distribution of some random analytic functions. Chinese Science Bulletin, Vol.10, no. 21 (1988).

A2. Papers in conference proceedings with review

Articles dans des conférences internationales à comité de lecture et actes publiées

1. Qiyu Jin, Bai Li, Yang Jie, Ion Grama, Quansheng Liu. A New Method for Removing Random-Valued Impulse Noise. 21st International Conference, ICONIP 2014, Nov 2014, Malaysia, Malaysia. Proceedings of Neural Information Processing. Kuching, Malaysia, November 3-6, 2014. Proceedings, Part III, pp.9-17
2. Vatutin, Vladimir; Liu, Quansheng. Branching processes evolving in asynchronous environments. Proceedings 59-th ISI World Statistics Congress, 1744 -1749. 25-30 August 2013, Hong Kong.
3. Chauvin, Brigitte; Liu, Quansheng; Pouyanne, Nicolas. Support and density of the limit m-ary search trees distribution. *23rd Intern. Meeting on Probabilistic, Combinatorial, and Asymptotic Methods for the Analysis of Algorithms (AofA'12),* 191–199, Discrete Math. Theor. Comput. Sci. Proc., AQ, *Assoc. Discrete Math. Theor. Comput. Sci., Nancy,* 2012. See also : arxiv: 1201.4098
4. Haijuan Hu, Li and Quansheng Liu. Non-local filter for removing a mixture of Gaussian and impulse noises. International Conference on Computer Vision Theory and Applications (VISAPP 2012). 24-26 February 2012, Rome, Italy (6 pages).
5. Qiyu Jin, Ion Grama and Quansheng Liu. A new approach for denoising images based on weights optimization. International Conference on Computer Vision Theory and Applications (VISAPP 2012). 24-26 February 2012, Rome, Italy (6 pages).
6. Qiyu Jin, Ion Grama and Quansheng Liu. Removing Poisson noise by optimization of weights in Non-Local Means. Proceedings of the 2012 International Symposium on Photonics and Optoelectronics (SOPO 2012), 21-23 May 2012, Shanghai, China (4 pages). Accepted. (Indexed by Ei Compendex and ISTP)
7. Quansheng Liu: Branching Random Walks in Random Environment. Proceedings of the 4th International Congress of Chinese Mathematicians, 2007 (ICCM 2007), Vol. II, 702-719. Eds.: L. Ji, K. Liu, L. Yang, S.-T. Yau. (Invited talk of 45 minutes)
8. Feng Xue, Quansheng Liu and Jacques Froment. An *a contrario* approach for parameters estimation of a motion-blurred image. The 6th International Conference on Energy Minimization Methods in Computer Vision and Pattern Recognition, 2007. Eds.: A.L.Yuille et al. EMMCVPR 2007, LNCS 4679, pp. 267-279.
9. Feng Xue, Quansheng Liu and Wei-hong Fan. Iterative Image Restoration using a Non-Local Regularization Function and a Local Regularization Operator. The 18th International Conference on Pattern Recognition, 2006 (IEEE ICPR 2006), Vol 3, 766-769.
10. Quansheng Liu. The branching measure, Hausdorff and packing measures on the Galton-Watson tree. In Mathematics and Compute Science, Trends in Mathematics, 2000, 251-263, Birkhauser: Verlag Basel. [13 pages]
11. Quansheng Liu and Alain Rouault. On two measures defined on the boundary of a branching tree. In "Classical and modern branching processes", ed. K.B. Athreya and P. Jagers. IMA Volumes in Mathematics and its applications, vol. 84, 1997, pp.187-202. Springer-Verlag. [16 pages]
12. Quansheng Liu. The growth of an entire characteristic function and the tail probability of the limit of a tree martingale. In Trees, Progress in Probability, vol.40 (1996), pp 51-80. Birkhauser: Verlag Basel, Eds. B. Chauvin, S. Cohen, A. Rouault. [30 pages]

3) Seminar papers/ Articles dans des actes de séminaires

13. Quansheng Liu. On the integrability of the limit of a supercritical branching process. Fascicule de Probabilités, Publ. Inst. Rech. Math. Rennes (1995). [4 pages]
14. Quansheng Liu. Flows in networks and Hausdorff measures associated, with applications to random fractal sets in Euclidian space. Fascicule de Probabilités, Publ. Inst. Rech. Math. Rennes (1994). [77 pages]

4) Thesis and Habilitation / Thèses et HDR

15. Quansheng Liu. Processus de Branchement, Cascades Multiplicatives et Fractals Aléatoires.Théorèmes Limites pour des Processus Indexés par un Arbre. Texte de Synthèse pour l'Habilitation à Diriger des Recherches, IRMAR, Univ. Rennes 1, 2000.
16. Quansheng Liu. Sur quelques problèmes à propos des processus de branchement, des flots dans les réseaux et des mesures de Hausdorff associées. Thèse de doctorat, Université Paris 6, 1993.
17. Quansheng Liu. On the growth and the value distribution of some random series of functions. Thèse d'étudiant-chercheur (Bac.+7ans), 1987, Wuhan Univ., Chine.