

List of Publications until 2016

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A1. Papers in international journals with review

Articles dans les revues internationales avec comité de lecture

2016

1. Ion Grama, Quansheng Liu, Eric Miqueu. Berry-Esseen's bound and Cramer's large deviation expansion for a supercritical branching process in a random environment. Stoch. Proc. Appl. 2016+, accepted. <http://dx.doi.org/10.1016/j.spa.2016.07.014>
2. Zhiqiang Gao and Quansheng Liu. Second and third orders asymptotic expansions for the distribution of particles in a branching random walk with a random environment in time. Bernoulli, 2016+, accepted.
3. Zhiqiang Gao and Quansheng Liu. Exact convergence rates in central limit theorems for a branching random walk with a random environment in time. Stoch. Proc. Appl. 126 (2016) 2634-2664.
4. Zhiqiang Gao and Quansheng Liu. First and second order expansions in the central limit theorem for a branching random walk. C. R. Acad. Sci. Paris, Ser. I, 354 (2016), no. 5, 532-537. <http://dx.doi.org/10.1016/j.crma.2016.01.021>
5. Qiyu Jin, Ion Grama, Quansheng Liu. Controlled Total Variation regularization for image deconvolution. Imaging Science Journal, 2016, 64 (2) : 68-81. DOI: 10.1080/13682199.2015.1123793
6. Haijuan Hu, Bing Li and Quansheng Liu. 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 (cf. <http://link.springer.com/article/10.1007/s10915-015-0073-9/fulltext.html>)

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7. 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.
8. 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.
9. X. Fan, I. Grama, Q. Liu. Exponential inequalities for martingales with applications. Electron. J. Probab. 20 (2015), no. 1, 1–22.
10. 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.
11. Xu Li, Quansheng Liu, Xinming Sun. Fixed point theory and image integrity authentication. IEEE Transcation on Image processing, 24 (2015), no. 2, 632-645.

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12. X. Fan, I. Grama, Q. Liu. A generalization of Cramér large deviations for martingales. C. R. Acad. Sci. Paris, Ser. I, 352 (2014) 853-858.
13. Yingqiu LI, Quansheng LIU, Zhiqiang GAO, Hesong WANG. Asymptotic properties of supercritical branching processes in random environments. Front. Math. China 2014, 9(4): 737–751. DOI 10.1007/s11464-014-0397-z.
14. 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.

15. Huang, Chunmao; Liu, Quansheng. Convergence in L_p and its exponential rate for a branching process in a random environment. *Electron. J. Probab.* 19 (2014), no. 104, 1–22. DOI: 10.1214/EJP.v19-3388
16. 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
17. 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>
18. 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
19. 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
20. 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.
21. Huang, Chunmao; Liu, Quansheng. Convergence rates for a supercritical branching process in a random environment. *Markov Processes and Related Fields*, 20 (2014), 265-285.
22. 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
23. 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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24. 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.
25. 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.
26. X. Lang, Q. Liu. Weighted moments of the limit of a branching process in a random environment. *Proceedings of Steklov Institute of Mathematics*, 282 (2013), no.1, 127-145. DOI: 10.1134/S0081543813060126
27. 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.
28. 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.
29. 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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30. Fan, X., Grama, I. and Liu Q. (2012). Large deviation exponential inequalities for supermartingales *Electron. Commun. Probab.* 17 (2012), no.59, 1–8. DOI: 10.1214/ECP.v17-2318
31. Fan, X., Grama, I. and Liu Q. Hoeffding's inequality for supermartingales. *Stoch. Proc. Appl.* 122, (2012) 3545–3559. See also arXiv:1109.4359 (SCI)

32. Chunmao Huang and Quansheng Liu. Moments, moderate and large deviations for a branching process in a random environment. *Stoch. Proc. Appl.* 122 (2012), 522-545.
33. 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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34. 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.
35. Yingqiu Li, Yangli Hu, Quansheng Liu. Weighted moments for a supercritical branching process in a varying or random environment. *Sci. China, Series A: mathematics.* 54 (2011) no.7, 1437-1444.
36. Hesong Wang, Zhiqiang Gao, Quansheng Liu. Central limit theorems for a supercritical branching process in a random environment. *Stat. Prob. Letters* 81 (2011) 539-547.
37. Xingang Liang, Quansheng Liu. Tail behavior of laws stable by random weighted mean. *C. R. Acad. Sci. Paris, Ser. I* 349 (2011) 347-352.
38. 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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39. Quansheng Liu, Frédérique Watbled. Exponential inequalities for martingales and asymptotic properties of the free energy of directed polymers in random environment. *Stoch. Proc. Appl.* 119 (2009), 3101-3132.
40. Quansheng Liu, Frédérique Watbled. Large deviation inequalities for supermartingales and applications to directed polymers in random environment. *C.R. Acad. Sci. Paris, Ser. I* 347 (2009) 1207 - 1212.
41. Yingqiu Li, Quansheng Liu. Age-dependent branching processes in random environments. *Sci. China, Series A: mathematics*, vol. 51, no.10, 1807-1830, 2008. (SCI, IF =0,584)
42. 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.
43. 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.
44. Quansheng Liu. On a linear recursive distributional equation. *J. Changsha University of Science and Technology.* vol.3, no.3, 2006, 91-97.
45. Quansheng Liu, Emmanuel Rio and Alain Rouault. Limit theorems for multiplicative processes. *Journal of Theoretical Probability*, Vol. 16, No. 4, 2003, 971-1014.
46. 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.
47. Quansheng Liu. An extension of a functional equation of Mandelbrot and Poincaré. *Asian J. Math.* 6 (2002), 145-168.
48. Quansheng Liu. Asymptotic properties and absolute continuity of laws stable by random weighted mean. *Stoch. Proc. Appl.* (2001), 83-107. [25 pages]
49. Quansheng Liu. Local dimensions of the branching measure on a Galton-Watson tree. *Ann. Inst. Henri Poincaré*, 37, 2 (2001) 195-222. [28 pages]
50. 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.
51. Quansheng Liu. On generalized multiplicative cascades. *Stoch. Proc. Appl.* 86 (2000) 263-286.
52. Quansheng Liu. Exact packing measure on a Galton-Watson tree. *Stoch. Proc. Appl.* 85 (2000)19-28.

53. Quansheng Liu and Alain Rouault. Limit theorems for Mandelbrot's multiplicative cascades. *Ann. Appl. Prob.* 10 (2000) 218-239.
54. Quansheng Liu. Sur certaines lois invariantes par moyenne pondérée aléatoire. *C. R. Acad. Sci. Paris*, 330, Série I (2000), 815-820.
55. Quansheng Liu. Sur Certaines Martingales de Mandelbrot Généralisées. *C. R. Acad. Sci. Paris*, t.328, Série I (1999), 1207-1212.
56. Quansheng Liu. Asymptotic properties of supercritical age-dependent branching processes. *Stoch. Proc. Appl.* 82 (1999) 61-87.
57. 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.
58. Quansheng Liu. Fixed points of a generalized smoothing transformation and applications to branching random walks. *Adv. Appl. Prob.* 30 (1998), 85-112.
59. 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.
60. Quansheng Liu. The exact Hausdorff dimension of a branching set. *Prob. Th. Rel. Fields*, 104 (1996), 515-538.
61. 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.
62. 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.
63. 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.
64. Quan-Sheng Liu. On the growth of some random hyperdirichlet series, *Chin. Ann. of Math.*, 10 B (2) (1989) 214-220.
65. 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.
66. 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 publiés

67. 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
68. 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.
69. 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
70. 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).
71. 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).
72. 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)

73. 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)
74. 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.
75. 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.
76. 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]
77. 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]
78. 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

79. Quansheng Liu. On the integrability of the limit of a supercritical branching process. Fascicule de Probabilités, Publ. Inst. Rech. Math. Rennes (1995). [4 pages]
80. 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

81. 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.
82. 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.
83. 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.