

Liste complète des publications

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1. E. Bogomolny, **O. Giraud** and C. Schmit, *Periodic Orbit Contribution to the 2-Point Correlation Form Factor for Pseudo-Integrable Billiards*, Commun. Math. Phys. **222**, 327-369 (2001).
2. E. Bogomolny and **O. Giraud**, *Semiclassical Calculations of the Two-Point Correlation Form Factor for Diffractive Systems*, Nonlinearity **15** Vol. 4, 993 (2002).
3. E. Bogomolny, **O. Giraud** and C. Schmit, *Nearest-Neighbor Distribution for Singular Billiards*, Phys. Rev. E **65**, 056214 (2002).
4. **O. Giraud**, *Diffractive orbits in isospectral billiards*, J. Phys. A : Math. Gen. **37** No 7, 2751 (2004).
5. **O. Giraud**, A. Thain and J. H. Hannay, *Shrunk loop theorem for the topology probabilities of closed Brownian (or Feynman) paths on the twice punctured plane*, J. Phys. A : Math. Gen. **37** No 8, 2913 (2004).
6. **O. Giraud**, J. Marklof and S. O'Keefe, *Intermediate statistics in quantum maps*, J. Phys. A : Math. Gen. **37** No 28, L303 (2004).
7. **O. Giraud**, *Periodic orbits and semiclassical form factor in barrier billiards*, Commun. Math. Phys. **260** No 1, 183 (2005).
8. **O. Giraud**, *Finite geometries and diffractive orbits in isospectral billiards*, J. Phys. A : Math. Gen. **38** No 27, L477 (2005).
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10. **O. Giraud** and B. Georgeot, *Intermediate quantum maps for quantum computation*, Phys. Rev. A **72**, 042312 (2005).

11. **O. Giraud**, *Distribution of bipartite entanglement for random pure states*, J. Phys. A : Math. Theor. **40**, 2793 (2007).
12. **O. Giraud**, J. Martin and B. Georgeot, *Entanglement of localized states*, Phys. Rev. A **76**, 042333 (2007).
13. **O. Giraud**, *Purity distribution for bipartite random pure states*, J. Phys. A : Math. Theor. **40**, F1053 (2007).
14. J. Martin, **O. Giraud** and B. Georgeot, *Multifractality and intermediate statistics in quantum maps*, Phys. Rev. E **77**, 035201(R) (2008).
15. M. Znidaric, **O. Giraud** and B. Georgeot, *Optimal number of controlled-NOT gates to generate a three-qubit state*, Phys. Rev. A **77**, 032320 (2008).
16. B. Georgeot and **O. Giraud**, *Quantum computing of semiclassical formulas*, Phys. Rev. E **77**, 046218 (2008).
17. **O. Giraud**, P. Braun and D. Braun, *Classicality of spin states*, Phys. Rev. A **78**, 042112 (2008).
18. **O. Giraud**, J. Martin and B. Georgeot, *Entropy of entanglement and multifractal exponents for random states*, Phys. Rev. A **79**, 032308 (2009).
19. I. Garcia-Mata, **O. Giraud** and B. Georgeot, *Quantum computation of multifractal exponents through the quantum wavelet transform*, Phys. Rev. A **79**, 052321 (2009).
20. **O. Giraud**, M. Znidaric and B. Georgeot, *Quantum circuit for three-qubit random states*, Phys. Rev. A **80**, 042309 (2009).
21. **O. Giraud**, B. Georgeot and D. Shepelyansky, *Delocalization transition for the Google matrix*, Phys. Rev. E **80**, 026107(2009).
22. E. Bogomolny, **O. Giraud** and C. Schmit, *Random matrix ensembles associated with Lax matrices*, Phys. Rev. Lett. **103**, 054103 (2009).
23. **O. Giraud**, P. Braun, and D. Braun, *Quantifying Quantumness and the Quest for Queens of Quantum*, New J. Phys. **12**, 063005 (2010).

24. B. Georgeot, **O. Giraud**, and D. L. Shepelyansky, *Spectral properties of the Google matrix of the World Wide Web and other directed networks*, Phys. Rev. E **81**, 056109 (2010).
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27. J. Martin, I. Garcia-Mata, **O. Giraud**, and B. Georgeot, *Multifractal wave functions of simple quantum maps*, Phys. Rev. E **82**, 046206 (2010).
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29. E. Bogomolny and **O. Giraud**, *Eigenfunction entropy and spectral compressibility for critical random matrix ensembles*, Phys. Rev. Lett. **106**, 044101 (2011).
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35. I. Garcia-Mata, J. Martin, **O. Giraud**, and B. Georgeot, *Multifractality of quantum wave packets*, Phys. Rev. E **86**, 056215 (2012).
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38. D. Braun, **O. Giraud**, I. Nechita, C. Pellegrini, and M. Znidaric, *A universal set of qubit quantum channels*, J. Phys. A : Math. Theor. **47**, 135302 (2014).
39. E. Bogomolny and **O. Giraud**, *Calculation of mean spectral density for statistically uniform tree-like random models*, Phys. Rev. E **88**, 062811 (2013).
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41. V. Kandiah, B. Georgeot, and **O. Giraud**, *Move ordering and communities in complex networks describing the game of go*, Eur. Phys. J. B **87**, 246 (2014).
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44. R. Dubertrand, I. García-Mata, B. Georgeot, **O. Giraud**, G. Lemarié, J. Martin, *Multifractality of quantum wave functions in the presence of perturbations*, Phys. Rev. E **92**, 032914 (2015).
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47. I. García-Mata and **O. Giraud**, *Average diagonal entropy in nonequilibrium isolated quantum systems*, Phys. Rev. E **94**, 012122 (2016).
48. F. Bohnet-Waldraff, D. Braun, and **O. Giraud**, *Partial transpose criteria for symmetric states*, Phys. Rev. A **94**, 042343 (2016).
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59. A. Bilen, I. García-Mata, B. Georgeot, and **O. Giraud**, *Multifractality of open quantum systems*, Phys. Rev. E **100**, 032223 (2019).
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61. J. Martin, S. Weigert, and **O. Giraud**, *Optimal Detection of Rotations by Coherent and Anticoherent States*, Quantum **4**, 285 (2020).

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80. L. Bremaud, **O. Giraud**, and D. Ullmo, *Mean-field-game approach to nonpharmaceutical interventions in a social-structure model of epidemics*, Phys. Rev. E **110**, 064301 (2024).
81. W. Chen, **O. Giraud**, J. Gong, and G. Lemarié, *Describing the critical behavior of the Anderson transition in infinite dimension by random-matrix ensembles : logarithmic multifractality and critical localization*, Phys. Rev. B **110**, 014210 (2024).
82. L. Bremaud, **O. Giraud**, and D. Ullmo, *Mean-field game approach to epidemic propagation on networks*, Phys. Rev. E **112**, L052301 (2025).
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Publications dans des actes de colloques - Proceedings

- P01. **O. Giraud**, J. Martin and B. Georgeot, *Entanglement and localization of wavefunctions*, Proceedings of the NATO Advanced Research Workshop 'Recent Advances in Nonlinear Dynamics and Complex System Physics', Tashkent, Uzbekistan (2009).
- P02. **O. Giraud**, *Introduction to quantum information*, Lecture notes for the Les Houches Summer School Exact Solvability and Quantum Information, 4-29 August 2025
<https://www.lptms.universite-paris-saclay.fr/leshouches2025/lecture-notes/>

Non publiés

1. **O. Giraud**, *Statistiques spectrales des systèmes diffractifs*,
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2. **O. Giraud**, *Critical systems and quantum multifractality*,
Thèse d'habilitation à diriger les recherches, 150 pages (2015)