CURRICULUM VITÆ

Josselin GARNIER
Professor, Ecole Polytechnique, France

Mailing address: CMAP, Centre de Mathématiques Appliquées, Ecole Polytechnique, Institut Polytechnique de Paris, 91120 Palaiseau, France.
French citizen. Birth date: June 18, 1971.
Email: josselin.garnier@polytechnique.edu. Web: https://www.josselin-garnier.org.

Education

B.S., M.S., Ecole Normale Supérieure, France, 1991-1994.
Ph.D., Ecole Polytechnique, France, 1996.
Habilitation Degree, University of Paris VI, France, 2000.

Academic experience

1996 - 2001	CNRS Research fellow, Ecole Polytechnique.
2001 - 2005	Associate Professor, University Paul Sabatier - Toulouse III.
2005 - 2007	Associate Professor, University Paris Diderot - Paris VII.
2007 - 2016	Professor, University Paris Diderot - Paris VII.
2016 - present	Professor, Ecole Polytechnique.

Honors and awards

- Blaise Pascal prize, Académie des Sciences, 2007.
- Felix Klein prize, European Mathematical Society, 2008.
- Junior member, Institut Universitaire de France, 2008-2013.
- Schlumberger chair, Institut des Hautes Études Scientifiques, 2010-2011 and 2013-2014.
- Invited speaker, International Congress of Mathematicians, Rio de Janeiro, Brazil, 2018.
- Grand Prix scientifique de la Fondation Simone et Cino Del Duca, Institut de France, 2021.
- Member of the Académie des Sciences, 2023.

Other professional activities

- Chairman of the Applied Mathematics Department at Ecole Polytechnique (2023-).
- Vice chairman of the Applied Mathematics Department at Ecole Polytechnique (2018-2023).
- Deputy director of Fondation Mathématique Jacques Hadamard, in charge of LabEx Hadamard (2019-2023).
- Founder of the start-up companies Sivienn (2014-) and Lusenn (2017-).
- Scientific consultant at Commissariat à l'Energie Atomique (2004-).
- Distinguished Visiting Professor at City University of Hong Kong (2025-).
- Affiliated professor, Ecole Normale Supérieure, Paris (2011-2014).
- Co-PI of the ERC advanced grant project MULTIMOD (2011-2016).
- Member of the editorial boards of the journals *Asymptotic Analysis*, *Discrete and Continuous Dynamical Systems Series S*, *ESAIM P&S*, *Inverse Problems and Imaging*, *Mathematics Research Reports*, and *SIAM/ASA Journal on Uncertainty Quantification (JUQ)*.

PUBLICATIONS

These papers can be downloaded from `https://www.josselin-garnier.org`

Regular papers

1. J. Garnier, *Stochastic invariant imbedding. Application to stochastic differential equations with boundary conditions*, Prob. Th. Rel. Fields **103** (1995), pp. 249–271.
2. J. Garnier, *Homogenization in a periodic and time-dependent potential*, SIAM, J. Appl. Math. **57** (1997), pp. 95–111.
3. J. Garnier, *Multi-scaled diffusion-approximation. Applications to wave propagation in random media*, European Series in Applied and Industrial Mathematics, Probability & Statistics **1** (1997), pp. 183–206.
4. J. Garnier, L. Videau, C. Gouédard, and A. Migus, *Statistical analysis of beam smoothing and some applications*, J. Opt. Soc. Am. A **14** (1997), pp. 1928–1937.
5. J. Garnier, J.-P. Fouque, L. Videau, C. Gouédard, and A. Migus, *Amplification of broadband incoherent light in homogeneously broadened media in presence of Kerr nonlinearity*, J. Opt. Soc. Am. B **14** (1997), pp. 2563–2569.
6. J. Garnier, *Transmission of solitons through random media*, SIAM, J. Appl. Math. **58** (1998), pp. 1969–1995.
7. J. Garnier, L. Videau, C. Gouédard, and A. Migus, *Propagation and amplification of incoherent pulses in dispersive and nonlinear media*, J. Opt. Soc. Am. B **15** (1998), pp. 2773–2781.
8. J. Garnier, *Asymptotic behavior of the quantum harmonic oscillator driven by a random time-dependent electric field*, J. Stat. Phys **93** (1998), pp. 211–241.
9. J. Garnier, L. Kallel, and M. Schoenauer, *Rigorous hitting times for binary mutations*, Evolutionary Computation **7** (1999), pp. 173–203.
10. J. Garnier, *Statistics of the hot spots produced by Random Phase Plates revisited*, Phys. Plasmas **6** (1999), pp. 1601-1610.
11. J. Garnier, C. Gouédard, and A. Migus, *Statistics of the hottest spot of speckle patterns generated by smoothing techniques*, Journal of Modern Optics **46** (1999), pp. 1213–1232.
12. L. Videau, C. Rouyer, J. Garnier, and A. Migus, *Motion of hot spots in smoothed beams*, J. Opt. Soc. Am. A **16** (1999), pp. 1672–1681.
13. F. Kh. Abdullaev and J. Garnier, *Modulational instability in birefringent fibers with periodic and random dispersion*, Phys. Rev. E **60** (1999), pp. 1042-1050.
14. F. Kh. Abdullaev and J. Garnier, *Solitons in media with random dispersive perturbations*, Physica D **134** (1999), pp. 303–315.
15. J. Garnier, *Energy distribution of the quantum harmonic oscillator under random time-dependent perturbations*, Phys. Rev. E **60** (1999), pp. 3676–3687.
16. J. Garnier, *Light propagation in square law media with random imperfections*, Wave Motion **31** (2000), pp. 1–19.
17. J. Garnier and L. Kallel, *Statistical distribution of the convergence time of evolutionary algorithms for longpath problems*, IEEE Transactions on Evolutionary Computation **4** (2000), pp. 16–30.
18. J. Garnier, C. Gouédard, and L. Videau, *Propagation of a partially coherent beam under the interaction of small and large scales*, Opt. Commun. **176** (2000), pp. 281–297.

19. L. Videau, C. Rouyer, J. Garnier, and A. Migus, *Generation of a pure phase modulated pulse by cascading effect. A theoretical approach*, J. Opt. Soc. Am. B **17** (2000), pp. 1008–1017.
20. J. Garnier and F. Kh. Abdullaev, *Modulational instability induced by randomly varying coefficients for the nonlinear Schrodinger equation*, Physica D **145** (2000), pp. 65–83.
21. J. Garnier, *Propagation of solitons in a randomly perturbed Ablowitz-Ladik chain*, Phys. Rev. E **63** (2001), 026608.
22. J. Garnier, *High-frequency asymptotics for Maxwell's equations in anisotropic media. Part I: Linear geometric and diffractive optics*, J. Math. Phys. **42** (2001), pp. 1612–1635.
23. J. Garnier, *High-frequency asymptotics for Maxwell's equations in anisotropic media. Part II: Nonlinear propagation and frequency conversion*, J. Math. Phys. **42** (2001), pp. 1636–1654.
24. J. Garnier, F. Kh. Abdullaev, E. Seve, and S. Wabnitz, *Role of polarization mode dispersion on modulational instability in optical fibers*, Phys. Rev. E **63** (2001), 066616.
25. J. Garnier, *Solitons in random media with long-range correlation*, Waves Random Media **11** (2001), pp. 149–162.
26. M.-O. Bernard, J. Garnier, and J.-F. Gouyet, *Laplacian growth of parallel needles. A Fokker-Planck equation approach*, Phys. Rev. E **64** (2001), 041401.
27. J. Garnier and L. Videau, *Statistical analysis of the sizes and velocities of laser hot spots of smoothed beams*, Phys. Plasmas **8** (2001), pp. 4914–4924.
28. J. Garnier, *Long-time dynamics of Korteweg-de Vries solitons driven by random perturbations*, J. Statist. Phys. **105** (2001), pp. 789–833.
29. J. Garnier and L. Kallel, *Efficiency of local search with multiple local optima*, SIAM J. Discrete Math. **15** (2002), pp. 122–141.
30. J. Garnier, *Instability of a quantum particle induced by a randomly varying spring coefficient*, Progress in Probability **52**, Birkhauser Verlag, 2002, pp. 153-172.
31. J. Garnier, *Stabilization of dispersion-managed solitons in random optical fibers by strong dispersion management*, Opt. Commun. **206** (2002), pp. 411–438.
32. J. Garnier, J. Fatome, and G. Le Meur, *Statistical analysis of pulse propagation driven by polarization-mode dispersion*, J. Opt. Soc. Am. B **19** (2002), pp. 1968–1977.
33. J. Garnier and F. Kh. Abdullaev, *Soliton dynamics in a random Toda chain*, Phys. Rev. E **67** (2003), 026609.
34. J. Garnier, P.-A. Raviart, C. Cherfils-Clérouin, and L. Masse, *Weakly nonlinear theory for the ablative Rayleigh-Taylor instability*, Phys. Rev. Lett. **90** (2003), 185003.
35. J. Garnier, J.-P. Ayanides, and O. Morice, *Propagation of partially coherent light by the Maxwell-Debye equation*, J. Opt. Soc. Am. B **20** (2003), pp. 1409–1417.
36. J. Garnier, *Length scale competition for the sine-Gordon kink in random environment*, Phys. Rev. B **68** (2003), 134302.
37. J. Garnier, C. Cherfils-Clérouin, and P.-A. Holstein, *Statistical analysis of multi-mode weakly nonlinear Rayleigh-Taylor instability in presence of surface tension*, Phys. Rev. E **68** (2003), 036401.
38. J.-P. Fouque, J. Garnier, J. C. Munoz Grajales, and A. Nachbin, *Time reversing solitary waves*, Phys. Rev. Lett. **92** (2004), 094502.
39. J. Garnier, F. Kh. Abdullaev, and B. B. Baizakov, *Collapse of a Bose-Einstein condensate induced by fluctuations of the laser intensity*, Phys. Rev. A **69** (2004), 053607.
40. D. G. Alfaro Vigo, J.-P. Fouque, J. Garnier, and A. Nachbin, *Robustness of time reversal for waves in time-dependent random media*, Stochastic Process. Appl. **111** (2004), pp. 289–313.

41. J.-P. Fouque, J. Garnier, and A. Nachbin, *Shock structure due to stochastic forcing and the time reversal of nonlinear waves*, Physica D **195** (2004), pp. 324–346.
42. J. Garnier and A. Nachbin, *The eddy viscosity for time reversing waves in a dissipative environment*, Phys. Rev. Lett. **93** (2004), 154501.
43. J.-P. Fouque, J. Garnier, and A. Nachbin, *Time reversal for dispersive waves in random media*, SIAM J. Appl. Math **64** (2004), pp. 1810–1838.
44. F. Kh. Abdullaev and J. Garnier, *Collective oscillations of one-dimensional Bose-Einstein gas under varying in time trap potential and atomic scattering length*, Phys. Rev. A. **70** (2004), 053604.
45. J. Garnier and C. Cherfils, *A multi-scale analysis of the hotspot dynamics during the deceleration phase of inertial confinement capsules*, Phys. Plasmas. **12** (2005), 012704.
46. J. Garnier and F. Kh. Abdullaev, *Symmetry breaking induced by random fluctuations for Bose-Einstein condensates in a double-well trap*, Phys. Rev. A **71** (2005), 033603.
47. J. Garnier and L. Masse, *Statistical approach of weakly nonlinear ablative Rayleigh-Taylor instability*, Phys. Plasmas **12** (2005), 062707.
48. J.-P. Fouque, J. Garnier, A. Nachbin, and K. Solna, *Time reversal refocusing for point source in randomly layered media*, Wave Motion **42** (2005), pp. 238–260.
49. F. Kh. Abdullaev and J. Garnier, *Dynamical stabilization of solitons in cubic-quintic nonlinear Schrödinger model*, Phys. Rev. E **72** (2005), 035603R.
50. J. Sanz, J. Garnier, C. Cherfils, B. Canaud, L. Masse, and M. Temporal, *Self-consistent analysis of the hot spot dynamics for inertial confinement fusion capsules*, Phys. Plasmas **12** (2005), 112702.
51. P. Del Moral and J. Garnier, *Genealogical particle analysis of rare events*, Ann. Appl. Probab. **15** (2005), pp. 2496–2534.
52. J. Garnier, *Imaging in randomly layered media by cross-correlating noisy signals*, SIAM Multiscale Model. Simul. **4** (2005), pp. 610–640.
53. F. Kh. Abdullaev and J. Garnier, *Propagation of matter wave solitons in periodic and random nonlinear potentials*, Phys. Rev. A **72** (2005), 061605R.
54. J. Garnier, *Statistical analysis of noise-induced multiple filamentation*, Phys. Rev. E **73** (2006), 046611.
55. J. Garnier and R. Marty, *Effective pulse dynamics in optical fibers with polarization mode dispersion*, Wave Motion **43** (2006), pp. 544–560.
56. J. Garnier and A. Nachbin, *The eddy viscosity for gravity waves propagating over turbulent surfaces*, Physics of Fluids **18** (2006), 055101.
57. J. Garnier and F. Kh. Abdullaev, *Transmission of matter wave solitons through nonlinear traps and barriers*, Phys. Rev. A **74** (2006), 013604.
58. J. Garnier and P. Del Moral, *Simulations of rare events in fiber optics by interacting particle systems*, Opt. Commun. **267** (2006), pp. 205–214.
59. J.-P. Fouque, J. Garnier, and K. Sølna, *Time reversal super resolution in randomly layered media*, Wave Motion **43** (2006), pp. 646–666.
60. J. Garnier, G. Malinié, Y. Saillard, and C. Cherfils-Clérouin, *Self-similar solutions for a nonlinear radiation diffusion equation*, Phys. Plasmas **13** (2006), 092703.
61. F. Kh. Abdullaev and J. Garnier, *Dynamical localization of matter wave solitons in managed barrier potentials*, Phys. Rev. A **75** (2007), 033603.
62. J. Garnier, F. Kh. Abdullaev, and M. Salerno, *Solitons in strongly driven discrete nonlinear Schrödinger-type models*, Phys. Rev. E **75** (2007), 016615.

63. J. Garnier, *The role of evanescent modes in randomly perturbed single-mode waveguides*, Discrete and Continuous Dynamical Systems Series B **8** (2007), pp. 455–472.
64. J. Garnier and G. Papanicolaou, *Pulse propagation and time reversal in random waveguides*, SIAM J. Appl. Math. **67** (2007), pp. 1718–1739.
65. J. Garnier, J. C. Munoz Grajales, and A. Nachbin, *Effective behavior of solitary waves over random topography*, SIAM Multiscale Model. Simul. **6** (2007), pp. 995–1025.
66. J. Garnier, R. A. Kraenkel, and A. Nachbin, *An optimal Boussinesq model for shallow-water waves interacting with a microstructure* Phys. Rev. E **76** (2007), 046311.
67. J. Fatome, J. Garnier, S. Pitois, M. Petit, G. Millot, M. Gay, B. Clouet, L. Bramerie, and J.-C. Simon, *All-optical measurements of background, amplitude and timing jitter for high speed pulse trains or PRBS sequences using autocorrelation function*, Optical Fiber Technology **14** (2008), pp. 84–91.
68. C. Bardos, J. Garnier, and G. Papanicolaou, *Identification of Green's functions singularities by cross correlation of noisy signals*, Inverse Problems **24** (2008), 015011.
69. J. Garnier and G. Papanicolaou, *Analysis of pulse propagation through an one-dimensional random medium using complex martingales*, Stochastics and Dynamics **8** (2008), pp. 127–138.
70. J. Garnier and K. Sølna, *Effective transport equations and enhanced backscattering in random waveguides*, SIAM J. Appl. Math. **68** (2008), pp. 1574–1599.
71. J. Garnier and K. Sølna, *Random backscattering in the parabolic scaling*, J. Stat. Phys. **131** (2008), pp. 445–486.
72. G. Bal, J. Garnier, S. Motsch, and V. Perrier, *Random integrals and correctors in homogenization*, Asymptotic Analysis **59** (2008), pp. 1–26.
73. J. Garnier and K. Sølna, *Coherent interferometric imaging for synthetic aperture radar in the presence of noise*, Inverse Problems **24** (2008), 055001.
74. J. Garnier and C. Cherfils-Clérouin, *The role of nuclear reactions and alpha-particle transport in the dynamics of Inertial Confinement Fusion capsules*, Phys. Plasmas **15** (2008), 102702.
75. C. Cannamela, J. Garnier, and B. Iooss, *Controlled stratification for quantile estimation*, Ann. Appl. Stat. **2** (2008), pp. 1554–1580.
76. J. Garnier and K. Sølna, *Pulse propagation in random media with long-range correlation*, SIAM Multiscale Model. Simul. **7** (2008), pp. 1302–1324.
77. J. Garnier and K. Sølna, *Coupled paraxial wave equations in random media in the white-noise regime*, Ann. Appl. Probab. **19** (2009), pp. 318–346.
78. J. Garnier and K. Sølna, *Scaling limits for wave pulse transmission and reflection operators*, Wave Motion **46** (2009), pp. 122–143.
79. J. Giorla, A. Masson, F. Poggi, R. Quach, P. Seytor, and J. Garnier, *A metamodeling approach for studying ignition target robustness in a highly dimensional parameter space*, Phys. Plasmas **16** (2009), 032704.
80. J. Garnier and K. Sølna, *A two-way paraxial system for simulation of wave backscattering by a random medium*, Journal of Computational Physics **228** (2009), pp. 3307-3325.
81. J. Garnier, A. Omrane, and Y. Rouchdy, *Asymptotic formulas for the derivatives of probability functions and their Monte Carlo estimations*, European Journal of Operational Research **198** (2009), pp. 848–858.
82. J. Garnier and G. Papanicolaou, *Passive sensor imaging using cross correlations of noisy signals in a scattering medium*, SIAM J. Imaging Sciences **2** (2009), pp. 396–437.
83. J. Garnier and K. Sølna, *Background velocity estimation with cross correlations of incoherent waves in the parabolic scaling*, Inverse Problems **25** (2009), 045005.

84. J. Garnier and K. Sølna, *Parabolic and white-noise approximations for elastic waves in random media*, Wave Motion **46** (2009), pp. 237–254.
85. J. Garnier and K. Sølna, *Paraxial coupling of electromagnetic waves in random media*, SIAM Multiscale Model. Simul. **7** (2009), pp. 1928–1955.
86. L. Borcea, T. Callaghan, J. Garnier, and G. Papanicolaou, *A universal filter for enhanced imaging with small arrays*, Inverse Problems **26** (2010), 015006.
87. J. Garnier and K. Sølna, *Effective fractional acoustic wave equations in random multiscale media*, J. Acoust. Soc. Am. **127** (2010), pp. 62–72.
88. J. Garnier and K. Sølna, *Fractional precursors in random media*, Waves in Random and Complex Media **20** (2010), pp. 122–155.
89. J. Garnier and G. Papanicolaou, *Resolution analysis for imaging with noise*, Inverse Problems **26** (2010), 074001.
90. J. Garnier and A. Picozzi, *Unified kinetic formulation of incoherent waves propagating in nonlinear media with noninstantaneous response*, Phys. Rev. A **82** (2010), 033831.
91. J. Garnier and K. Sølna, *Wave transmission through random layering with pressure release boundary conditions*, SIAM Multiscale Model. Simul. **8** (2010), pp. 912–943.
92. J. M. Dudley, C. Finot, G. Millot, J. Garnier, G. Genty, D. Agafontsev, and F. Dias, *Extreme events in optics: Challenges of the MANUREVA project*, Eur. Phys. J. Special Topics **185** (2010), pp. 125–133.
93. J. Garnier, *Imaging with ambient noise*, SIAM News **43**, issue 7, September 2010, pp. 8–9.
94. J. Garnier and K. Sølna, *Cross correlation and deconvolution of noise signals in randomly layered media*, SIAM J. Imaging Sci. **3** (2010), pp. 809–834.
95. J. Garnier, *Optimal transmission through a randomly perturbed waveguide in the localization regime*, Discrete and Continuous Dynamical Systems Series B **15** (2011), pp. 597–621.
96. H. Ammari, J. Garnier, H. Kang, W. K. Park, and K. Sølna, *Imaging schemes for perfectly conducting cracks*, SIAM J. Appl. Math. **71** (2011), pp. 68–91.
97. C. Michel, J. Garnier, P. Suret, S. Randoux, and A. Picozzi, *Kinetic description of random optical waves and anomalous thermalization of a nearly integrable wave system*, Lett. Math. Phys. **96** (2011), pp. 415–447.
98. P. Aschieri, J. Garnier, C. Michel, V. Doya, and A. Picozzi, *Condensation and thermalization of classsical optical waves in a waveguide configuration*, Phys. Rev. A **83** (2011), 033838.
99. J. Garnier and K. Sølna, *Background velocity estimation by cross correlation of ambient noise signals in the radiative transport regime*, Communications in Mathematical Sciences **9** (2011), pp. 743–766.
100. J. Garnier and K. Sølna, *Filtered Kirchhoff migration of cross correlations of ambient noise signals*, Inverse Problems and Imaging **5** (2011), pp. 371–390.
101. L. Borcea, J. Garnier, G. Papanicolaou, and C. Tsogka, *Coherent interferometric imaging, time gating, and beamforming*, Inverse Problems **27** (2011), 065008.
102. H. Ammari, J. Garnier, H. Kang, H. Lee, and K. Sølna, *The mean escape time for a narrow escape problem with multiple switching gates*, SIAM Multiscale Model. Simul. **9** (2011), pp. 817–833.
103. L. Borcea, J. Garnier, G. Papanicolaou, and C. Tsogka, *Enhanced statistical stability in coherent interferometric imaging*, Inverse Problems **27** (2011), 085004.
104. J. Garnier and G. Papanicolaou, *Fluctuation theory of ambient noise imaging*, CRAS Geoscience **343** (2011), pp. 502–511.

105. M. V. de Hoop, J. Garnier, S. F. Holman, and K. Sølna, *Scattering enabled retrieval of Green's functions from remotely incident wave packets using cross correlations*, CRAS Geoscience **343** (2011), pp. 526–532.
106. A. Picozzi and J. Garnier, *Incoherent soliton turbulence in nonlocal nonlinear media*, Phys. Rev. Lett. **107** (2011), 233901.
107. M. Munoz Zuniga, J. Garnier, E. Remy, and E. de Rocquigny, *Adaptative Directional Stratification for controlled estimation of the probability of a rare event*, Reliability Engineering & System Safety **96** (2011), pp. 1691–1712.
108. J. Garnier and K. Kalimeris, *Perturbed inverse scattering theory for the Nonlinear Schrodinger equation with non-vanishing boundaries*, J. Phys. A: Math. Theor. **45** (2012), 035202.
109. H. Ammari, J. Garnier, V. Jugnon, and H. Kang, *Stability and resolution analysis for a topological derivative based imaging functional*, SIAM J. Control Opt. **50** (2012), pp. 48–76.
110. H. Ammari, J. Garnier, and K. Sølna, *A statistical approach to target detection and localization in the presence of noise*, Waves in Random and Complex Media **22** (2012), pp. 40–65.
111. H. Ammari, E. Bretin, J. Garnier, and A. Wahab, *Noise source localization in an attenuating medium*, SIAM J. Appl. Math. **72** (2012), pp. 317–336.
112. J. Garnier and K. Sølna, *Coupled wideangle wave approximations*, SIAM Multiscale Model. Simul. **10** (2012), pp. 217–244.
113. M. Munoz Zuniga, J. Garnier, E. Remy, and E. de Rocquigny, *Analysis of adaptive directional stratification for the controlled estimation of rare event probabilities*, Stat. Comput. **22** (2012), pp. 809–821.
114. H. Ammari, J. Garnier, H. Kang, M. Lim, and K. Sølna, *Multistatic imaging of extended targets*, SIAM J. Imaging Sci. **5** (2012), pp. 564–600.
115. G. Bal, J. Garnier, Y. Gu, and W. Jing, *Corrector theory for elliptic equations with long-range correlated random potential*, Asymptotic Analysis **77** (2012), pp. 123–145.
116. J. Garnier and G. Papanicolaou, *Correlation based virtual source imaging in strongly scattering media*, Inverse Problems **28** (2012), 075002.
117. B. Kibler, C. Michel, J. Garnier, and A. Picozzi, *Temporal dynamics of incoherent waves in noninstantaneous response nonlinear Kerr media*, Opt. Lett. **37** (2012), pp. 2472–2474.
118. J. Garnier, M. Lisak, and A. Picozzi, *Toward a wave turbulence formulation of statistical nonlinear optics*, J. Opt. Soc. Am. B **29** (2012), pp. 2229–2242.
119. R. Alonso, L. Borcea, and J. Garnier, *Wave propagation in waveguides with rough boundaries*, Commun. Math. Sci. **11** (2012), pp. 233–267.
120. H. Ammari, J. Garnier, and W. Jing, *Resolution and stability analysis in acousto-electric imaging*, Inverse Problems **28** (2012), 084005.
121. C. Michel, B. Kibler, J. Garnier, and A. Picozzi, *Temporal incoherent solitons supported by a defocusing nonlinearity with anomalous dispersion*, Phys. Rev. A **86** (2012), 041801(R).
122. H. Ammari, E. Bretin, J. Garnier, and V. Jugnon, *Coherent interferometry algorithms for photoacoustic imaging*, SIAM J. Numer. Anal. **50** (2012), pp. 2259–2280.
123. H. Ammari, E. Bossy, J. Garnier, and L. Seppecher, *Acousto-electromagnetic tomography*, SIAM J. Appl. Math. **72** (2012), pp. 1592–1617.
124. M. V. de Hoop, J. Garnier, and K. Sølna, *Enhanced and specular backscattering in random media*, Waves Random Complex Media **22** (2012) pp. 505–530.
125. H. Ammari, T. Boulier, and J. Garnier, *Modeling active electrolocation in weakly electric fish*, SIAM J. Imaging Sci. **6** (2013), pp. 285–321.

126. H. Ammari, E. Bossy, J. Garnier, W. Jing, and L. Seppecher, *Radiative transfer and diffusion limits for wave field correlations in locally shifted random media*, J. Math. Phys. **54** (2013), 021501.
127. F. D. Philippe, C. Prada, M. Fink, J. Garnier, and J. de Rosny, *Analysis of the time reversal operator for a scatterer undergoing small displacements*, J. Acoust. Soc. Am. **133** (2013), pp. 94–107.
128. J. Garnier, G. Papanicolaou, and T.-W. Yang, *Large deviations for a mean field model of systemic risk*, SIAM Math. Finance **4** (2013), pp. 151–184.
129. B. Barviau, J. Garnier, G. Xu, B. Kibler, G. Millot, and A. Picozzi, *Truncated thermalization of incoherent optical waves through supercontinuum generation in photonic crystal fibers*, Phys. Rev. A **87** (2013), 035803.
130. H. Ammari, J. Garnier, W. Jing, and L. H. Nguyen, *Quantitative thermo-acoustic imaging: An exact reconstruction formula*, J. Differential Equations **254** (2013), pp. 1375–1395.
131. J. Ko and J. Garnier, *Multi-element stochastic spectral projection for high quantile estimation*, J. Comput. Phys. **243** (2013), pp. 87–108.
132. J. Garnier and K. Sølna, *A multiscale approach to synthetic aperture radar in dispersive random media*, Inverse Problems **29** (2013), 054006.
133. H. Ammari, J. Garnier, and K. Sølna, *Resolution and stability analysis in full-aperture, linearized conductivity and wave imaging*, Proc. Amer. Math. Soc. **141** (2013), pp. 3431–3446.
134. H. Ammari, E. Bretin, J. Garnier, and A. Wahab, *Time reversal in visco-elastic media*, European Journal of Applied Mathematics **24** (2013), pp. 565–600.
135. H. Ammari, J. Garnier, and W. Jing, *Passive array correlation-based imaging in a random waveguide*, SIAM Multiscale Model. Simul. **11** (2013), pp. 656–681.
136. H. Ammari, T. Boulier, J. Garnier, H. Kang, and H. Wang, *Tracking of a mobile target using Generalized Polarization Tensors*, SIAM J. Imaging Sciences **6** (2013), pp. 1477–1498.
137. H. Ammari, J. Garnier, L. H. Nguyen, and L. Seppecher, *Reconstruction of piecewise smooth absorption map by an acousto-optic process*, Comm. Part. Differ. Equat. **38** (2013), pp. 1737–1762.
138. G. Xu, J. Garnier, S. Trillo, and A. Picozzi, *Spectral dynamics of incoherent waves with a noninstantaneous nonlinear response*, Opt. Lett. **38** (2013), pp.2972–2975.
139. J. Garnier, G. Papanicolaou, A. Semin, and C. Tsogka, *Signal-to-noise ratio estimation in passive correlation-based imaging*, SIAM J. Imaging Sciences **6** (2013) pp. 1092–1110.
140. H. Ammari, J. Garnier, and K. Sølna, *Partial data resolving power of conductivity imaging from boundary measurements*, SIAM Math. Anal. **45** (2013), pp. 1704–1722.
141. M. V. de Hoop, J. Garnier, S. F. Holman, and K. Sølna, *Retrieval of a Green's function with reflections from partly coherent waves generated by a wave packet using cross correlations*, SIAM J. Appl. Math. **73** (2013), pp. 493–522.
142. J. Garnier, G. Xu, S. Trillo, and A. Picozzi, *Incoherent dispersive shocks in the spectral evolution of random waves*, Phys. Rev. Lett. **111** (2013), 113902.
143. H. Ammari, E. Bretin, J. Garnier, W. Jing, H. Kang, and A. Wahab, *Localization, stability, and resolution of topological derivative based imaging functionals in elasticity*, SIAM J. Imaging Sciences **6** (2013), pp. 2174–2212.
144. J. Garnier, G. Papanicolaou, and T.-W. Yang, *Anomalous shock displacement probabilities for a perturbed scalar conservation law*, SIAM Multiscale Model. Simul. **11** (2013), pp. 1000–1032.

145. F. Bachoc, G. Bois, J. Garnier, and J.-M. Martinez, *Calibration and improved prediction of computer models by universal Kriging*, Nuclear Science and Engineering **176** (2014), pp. 81–97.
146. G. Xu, J. Garnier, and A. Picozzi, *Spectral long-range interaction of temporal incoherent solitons*, Opt. Lett. **39** (2014), pp. 590–593.
147. H. Ammari, J. Garnier, H. Kang, M. Lim, and S. Yu, *Generalized polarization tensors for shape description*, Numer. Math. **126** (2014), pp. 199–224.
148. H. Ammari, T. Boulier, J. Garnier, W. Jing, H. Kang, and H. Wang, *Target identification using dictionary matching of generalized polarization tensors*, Found. Comput. Math. **14** (2014), pp. 27–62.
149. H. Ammari, J. Garnier, and L. Giovangigli, *Mathematical modeling of fluorescence diffuse optical imaging of cell membrane potential changes*, Q. Appl. Math. **72** (2014), pp. 137–176.
150. H. Ammari, J. Garnier, and P. Millien, *Backpropagation imaging in nonlinear harmonic holography in the presence of measurement and medium noises*, SIAM J. Imaging Sciences **7** (2014), pp. 239–276.
151. J. Garnier and K. Sølna, *Scintillation in the white-noise paraxial regime*, Comm. Part. Differ. Equat. **39** (2014), pp. 626–650.
152. H. Ammari, J. Chen, Z. Chen, J. Garnier, and D. Volkov, *Target detection and characterization from electromagnetic induction data*, J. Math. Pures Appl. **101** (2014), pp. 54–75.
153. J. Garnier and G. Papanicolaou, *Role of scattering in virtual source array imaging*, SIAM J. Imaging Sciences **7** (2014), pp. 1210–1236.
154. G. Xu, J. Garnier, M. Conforti, and A. Picozzi, *Generalized description of spectral incoherent solitons*, Opt. Lett. **39** (2014), pp. 4192–4195.
155. G. Xu, J. Garnier, S. Trillo, and A. Picozzi, *Impact of self-steepening on incoherent dispersive spectral shocks and collapse-like spectral singularities*, Phys. Rev. A **90** (2014), 013828.
156. H. Ammari, J. Garnier, J. de Rosny, and K. Sølna, *Medium induced resolution enhancement for broadband imaging*, Inverse Problems **30** (2014), 085006.
157. H. Ammari, T. Boulier, J. Garnier, and H. Wang, *Shape recognition and classification in electro-sensing*, Proc. Natl. Acad. Sci. U.S.A. **111** (2014), pp. 11652–11657.
158. H. Ammari, E. Bossy, J. Garnier, L. H. Nguyen, and L. Seppecher, *A reconstruction algorithm for ultrasound-modulated diffuse optical tomography*, Proc. Amer. Math. Soc. **142** (2014), pp. 3221–3236.
159. A. Picozzi, J. Garnier, T. Hansson, P. Suret, S. Randoux, G. Millot, and D. N. Christodoulides, *Optical wave turbulence: Toward a unified nonequilibrium thermodynamic formulation of statistical nonlinear optics*, Phys. Rep. **542** (2014), pp. 1–132.
160. L. Le Gratiet and J. Garnier, *Recursive co-kriging model for Design of Computer experiments with multiple levels of fidelity*, Int. J. Uncertainty Quantification **4** (2014), pp. 365–386.
161. J. Garnier and G. Papanicolaou, *Resolution enhancement from scattering in passive sensor imaging with cross correlations*, Inverse Problems and Imaging **8** (2014), pp. 645–683.
162. J. Garnier and K. Sølna, *Wave backscattering by point scatterers in the random paraxial regime*, SIAM Multiscale Model. Simul. **12** (2014), pp. 1309–1334.
163. L. Borcea and J. Garnier, *Paraxial coupling of propagating modes in three-dimensional waveguides with random boundaries*, SIAM Multiscale Model. Simul. **12** (2014), pp. 832–878.
164. J. Garnier and M. Fink, *Super-resolution in time-reversal focusing on a moving source*, Wave Motion **53** (2015), pp. 80–93.

165. J. Garnier, G. Papanicolaou, A. Semin, and C. Tsogka, *Signal-to-noise ratio analysis in virtual source array imaging*, SIAM J. Imaging Sciences **8** (2015), pp. 248–279.
166. J. Garnier and K. Sølna, *Transmission and reflection of electromagnetic waves in randomly layered media*, Commun. Math. Sci. **13** (2015), pp. 707–728.
167. L. Le Gratiet and J. Garnier, *Asymptotic analysis of the learning curve for Gaussian process regression*, Mach. Learn. **98** (2015) pp. 407–433.
168. H. Ammari, J. Garnier, and V. Jugnon, *Detection, reconstruction, and characterization algorithms from noisy data in multistatic wave imaging*, Discrete and Continuous Dynamical Systems Series S **8** (2015), pp. 389–417.
169. L. Borcea, J. Garnier, and C. Tsogka, *A quantitative study of source imaging in random waveguides*, Commun. Math. Sci. **13** (2015), pp. 749–776.
170. G. Xu, D. Vocke, D. Faccio, J. Garnier, T. Roger, S. Trillo, and A. Picozzi, *From dispersive shocklets to giant collective incoherent shock waves in nonlocal turbulent flows*, Nature Communications **6** (2015), 8131.
171. J. Garnier and K. Sølna, *On effective attenuation in multiscale composite media*, Waves in Random Complex Media **25** (2015), pp. 482–505.
172. J. Garnier and K. Sølna, *Paraxial approximation for a general random hyperbolic system*, SIAM Multiscale Model. Simul. **13** (2015), pp. 1022–1060.
173. J. Garnier and G. Papanicolaou, *Passive synthetic aperture imaging*, SIAM J. Imaging Sciences **8** (2015), pp. 2683–2705.
174. J. Garnier and K. Sølna, *Fourth-moment analysis for beam propagation in the white-noise paraxial regime*, Arch. Rational Mech. Anal. **220** (2016), pp. 37–81.
175. L. Borcea and J. Garnier, *Derivation of a one-way radiative transfer equation*, Phys. Rev. E **93** (2016), 022115.
176. H. Ammari, J. Garnier, L. Giovangigli, W. Jing, and J. K. Seo, *Spectroscopic imaging of a dilute cell suspension*, J. Math. Pures Appl. **105** (2016), pp. 603–661.
177. L. Borcea and J. Garnier, *Polarization effects for electromagnetic wave propagation in random media*, Wave Motion **63** (2016), pp. 179–208.
178. J. Garnier and K. Sølna, *Apparent attenuation of shear waves propagating through a stratified anisotropic medium*, Stochastics and Dynamics **16** (2016), 1650009.
179. J. Garnier, *Ghost imaging in the random paraxial regime*, Inverse Problems and Imaging **10** (2016), pp. 409–432.
180. E. Daskalakis, C. Evangelidis, J. Garnier, N. Melis, G. Papanicolaou, and C. Tsogka, *Robust seismic velocity change estimation using ambient noise recordings*, Geophysical Journal International **205** (2016), pp. 1926–1936.
181. G. Xu, J. Garnier, D. Faccio, S. Trillo, and A. Picozzi, *Incoherent shock waves in long-range optical turbulence*, Physica D **333** (2016), pp. 310–322.
182. G. Xu, J. Garnier, A. Mussot, S. Trillo, D. Churkin, N. Tarasov, S. Turitsyn, and A. Picozzi, *Weak Langmuir optical turbulence in a fiber cavity*, Phys. Rev. A **94** (2016), 013823.
183. J. Garnier, *Passive synthetic aperture imaging with limited noise sources*, Inverse Problems **32** (2016), 095008.
184. L. Borcea and J. Garnier, *Robust imaging with electromagnetic waves in noisy environments*, Inverse Problems **32** (2016), 105010.
185. A. Fusaro, J. Garnier, C. Michel, G. Xu, J. Fatome, L. G. Wright, F. W. Wise, and A. Picozzi, *Decoupled polarization dynamics of incoherent waves and bimodal spectral incoherent solitons*, Optics Letters **41** (2016), pp. 3992–3995.

186. J. Garnier, G. Papanicolaou, and T.-W. Yang, *Consensus convergence with stochastic effects*, Vietnam Journal of Mathematics **45** (2017), pp. 51–75.
187. M. Gilles, P.-Y. Bony, J. Garnier, A. Picozzi, M. Guasoni, and J. Fatome, *Universal polarization domain walls in optical fibres as topological bit-entities for data transmission*, Nature Photonics **11** (2017), pp. 102–107.
188. H. Ammari, T. Boulier, J. Garnier, and H. Wang, *Mathematical modelling of the electric sense of fish: the role of multifrequency measurements and movement*, Bioinspir. Biomim. **12** (2017), 025002.
189. M. Guasoni, J. Garnier, B. Rump, D. Sugny, J. Fatome, F. Amrani, G. Millot, and A. Picozzi, *Incoherent Fermi-Pasta-Ulam recurrences mediated by strong phase correlations*, Phys. Rev. X **7** (2017), 011025.
190. P.-D. Letourneau, Y. Wu, G. Papanicolaou, J. Garnier, and E. Darve, *A numerical study of super-resolution through fast 3D wideband algorithm for scattering in highly-heterogeneous media*, Wave Motion **70** (2017), pp. 113–134.
191. J. Garnier, G. Papanicolaou, and T.-W. Yang, *A risk analysis for a system stabilized by a central agent*, Risk and Decision Analysis **6** (2017), pp. 97–120.
192. L. Borcea, J. Garnier, G. Papanicolaou, K. Sølna, and C. Tsogka, *Resolution analysis of passive synthetic aperture imaging of fast moving objects*, SIAM J. Imaging Sciences **10** (2017), pp. 665–710.
193. G. Perrin, C. Soize, S. Marque-Pucheu, and J. Garnier, *Nested polynomial trends for the improvement of Gaussian process-based predictors*, J. Comput. Phys. **346** (2017), pp. 389–402.
194. A. Fusaro, J. Garnier, G. Xu, C. Conti, D. Faccio, S. Trillo, and A. Picozzi, *Emergence of long-range phase coherence in nonlocal fluids of light*, Phys. Rev. A **95** (2017), 063818.
195. J. Garnier and K. Sølna, *Correction to Black-Scholes formula due to fractional stochastic volatility*, SIAM Math. Finance **8** (2017), pp. 560–588.
196. G. Xu, J. Garnier, B. Rumpf, A. Fusaro, P. Suret, S. Randoux, A. Kudlinski, G. Millot, and A. Picozzi, *Origins of spectral broadening of incoherent waves: Catastrophic process of coherence degradation*, Phys. Rev. A **96** (2017), 023817.
197. J. Garnier and K. Sølna, *Focusing waves through a randomly scattering medium in the white-noise paraxial regime*, SIAM J. Appl. Math. **77** (2017), pp. 500–519.
198. L. Borcea and J. Garnier, *Pulse reflection in a random waveguide with a turning point*, SIAM Multiscale Model. Simul. **15** (2017), pp. 1472–1501.
199. M. Fink and J. Garnier, *Ambient noise correlation-based imaging with moving sensors*, Inverse Problems and Imaging **11** (2017), pp. 477–500.
200. L. Borcea, J. Garnier, and D. Wood, *Transport of power in random waveguides with turning points*, Commun. Math. Sci. **15** (2017), pp. 2327–2371.
201. J. Fournier, J. Garnier, G. Papanicolaou, and C. Tsogka, *Matched-filter and correlation-based imaging for fast moving objects using a sparse network of receivers*, SIAM J. Imaging Sci. **10** (2017), pp. 2165–2216.
202. M. V. de Hoop, J. Garnier, and K. Sølna, *Global acoustic daylight imaging for a stratified Earth-like model*, Inverse Problems **34** (2018), 015005.
203. N. Santic, S. Salem, J. Garnier, A. Fusaro, A. Picozzi, and R. Kaiser, *Non-equilibrium precondensation of classical waves in two dimensions propagating through atomic vapors*, Phys. Rev. Lett. **120** (2018), 055301.
204. L. Borcea and J. Garnier, *Laser beam imaging from the speckle pattern of the off-axis scattered intensity*, SIAM J. Appl. Math. **78** (2018), pp. 677–704.

205. M. Dupré, M. Fink, J. Garnier, and G. Lerosey, *Layer potential approach for fast eigenvalue characterization of the Helmholtz equation with mixed boundary conditions*, Comp. Appl. Math. **37** (2018), pp. 4675–4685.
206. J. Garnier and K. Sølna, *Imaging through a scattering medium by speckle intensity correlations*, Inverse Problems **34** (2018), 094003.
207. J. Garnier and K. Sølna, *Option pricing under fast-varying and rough stochastic volatility*, Annals of Finance **14** (2018), pp. 489–516.
208. G. Xu, A. Fusaro, J. Garnier, and A. Picozzi, *Incoherent shock and collapse singularities in non-instantaneous nonlinear media*, Appl. Sci. **8** (2018), 2559.
209. J. Garnier and K. Sølna, *Non-invasive imaging through random media*, SIAM J. Appl. Math. **78** (2018), pp. 3296–3315.
210. L. Borcea and J. Garnier, *A ghost imaging modality in a random waveguide*, Inverse Problems **34** (2018), 124007.
211. J. Garnier, G. Papanicolaou, and T.-W. Yang, *Mean field model for collective motion bistability*, Discrete and Continuum Dynamical Systems Series B **24** (2019), pp. 851–879.
212. J. Garnier and K. Sølna, *Option pricing under fast-varying long-memory stochastic volatility*, Math. Finance **29** (2019), pp. 39–83.
213. L. Borcea, J. Garnier, and K. Sølna, *Wave propagation and imaging in moving random media*, SIAM Multiscale Model. Simul. **17** (2019), pp. 31–67.
214. A. Fusaro, J. Garnier, K. Krupa, G. Millot, and A. Picozzi, *Dramatic acceleration of wave condensation mediated by disorder in multimode fibers*, Phys. Rev. Lett. **122** (2019), 123902.
215. J. Garnier and K. Sølna, *Emergence of turbulent epochs in oil prices*, Chaos, Solitons and Fractals **122** (2019), pp. 281–292.
216. S. Marque-Pucheu, G. Perrin, and J. Garnier, *Efficient sequential experimental design for surrogate modeling of nested codes*, ESAIM Probab. Stat. **23** (2019), pp. 245–270.
217. J. Garnier and K. Sølna, *Chaos and order in the bitcoin market*, Physica A **524** (2019), pp. 708–721.
218. H. Chraibi, A. Dutfoy, T. Galtier, and J. Garnier, *Application of the interacting particle system method to piecewise deterministic Markov processes used in reliability*, Chaos **29** (2019), 063119.
219. L. Dumaz, J. Garnier, and G. Lepoultier, *Acoustic and geoacoustic inverse problems in randomly perturbed shallow-water environments*, J. Acoust. Soc. Am. **146** (2019), pp. 458–469.
220. J. Garnier, A. Fusaro, K. Baudin, C. Michel, K. Krupa, G. Millot, and A. Picozzi, *Wave condensation with disorder versus beam self-cleaning in multimode fibers*, Phys. Rev. A **100** (2019), 053835.
221. H. Chraibi, A. Dutfoy, T. Galtier, and J. Garnier, *On the optimal importance process for piecewise deterministic Markov process*, ESAIM Probab. Stat. **23** (2019), pp. 893–921.
222. L. Borcea, J. Garnier, and K. Sølna, *Sound propagation in a weakly turbulent flow in a waveguide*, SIAM J. Appl. Math. **79** (2019), pp. 2663–2687.
223. M. Fink and J. Garnier, *How a moving passive observer can perceive its environment ? The Unruh effect revisited*, Wave Motion **93** (2020), 102462.
224. L. Borcea and J. Garnier, *Wave propagation in randomly perturbed weakly coupled waveguides*, SIAM Multiscale Model. Simul. **18** (2020), pp. 44–78.
225. L. Borcea and J. Garnier, *High-Resolution Interferometric Synthetic Aperture Imaging in scattering media*, SIAM J. Imaging Sciences **13** (2020), pp. 291–316.

226. L. Borcea, J. Garnier, and K. Sølna, *Multimode communication through the turbulent atmosphere*, J. Opt. Soc. Am. A **37** (2020), pp. 720–730.
227. R. Sainct, C. Féau, J.-M. Martinez, and J. Garnier, *Efficient methodology for seismic fragility curves estimation by active learning on Support Vector Machines*, Structural Safety **86** (2020), 101972.
228. J. Garnier, E. Gay, and E. Savin, *Multiscale analysis of spectral broadening of acoustic waves by a turbulent shear layer*, SIAM Multiscale Model. Simul. **18** (2020), pp. 798–823.
229. J. Garnier and K. Sølna, *Implied volatility structure in turbulent and long-memory markets*, Front. Appl. Math. Stat. **6** (2020), 10.
230. J. Garnier and K. Sølna, *Optimal hedging under fast-varying stochastic volatility*, SIAM Math. Finance **11** (2020), pp. 274–325.
231. J. Garnier, *Intensity fluctuations in random waveguides*, Commun. Math. Sci. **18** (2020), pp. 947–971.
232. S. Marque-Pucheu, G. Perrin, and J. Garnier, *An efficient dimension reduction technique for the Gaussian process emulation of two nested codes with functional outputs*, Computational Statistics **35** (2020), pp. 1059–1099.
233. G.-K. Delipei, J. Garnier, J.-C. Le Pallec, and B. Normand, *High to Low pellet cladding gap heat transfer modeling methodology in an uncertainty quantification framework for a PWR REA with Best Estimate coupling*, EPJ Nuclear Sci. Technol. **6** (2020), 56.
234. J. Garnier, *Low-frequency source imaging in a waveguide*, Inverse Problems **36** (2020), 115004.
235. K. Baudin, A. Fusaro, K. Krupa, J. Garnier, S. Rica, G. Millot, and A. Picozzi, *Classical Rayleigh-Jeans condensation of light waves: Observation and thermodynamic characterization*, Phys. Rev. Lett. **125** (2020), 244101.
236. E. Gay, L. Bonnet, C. Peyret, E. Savin, and J. Garnier, *Coherent interferometric imaging in a random flow*, Journal of Sound and Vibration **494** (2021), 115852.
237. L. Borcea, J. Garnier, and K. Sølna, *Onset of energy equipartition among surface and body waves*, Proc. R. Soc. A **477** (2021), 20200775.
238. J. Garnier and K. Sølna, *Enhanced backscattering of a partially coherent field from an anisotropic random lossy medium*, Discrete and Continuum Dynamical Systems Series B **26** (2021), pp. 1171–1195.
239. J. Garnier, *Passive communication with ambient noise*, SIAM J. Appl. Math. **81** (2021), pp. 814–833.
240. K. Baudin, A. Fusaro, J. Garnier, N. Berti, K. Krupa, I. Carusotto, S. Rica, G. Millot, and A. Picozzi, *Energy and wave-action flows underlying Rayleigh-Jeans thermalization of optical waves propagating in a multimode fiber*, EPL (Europhysics Letters) **134** (2021), 14001.
241. H. Chraibi, A. Dutfoy, T. Galtier, and J. Garnier, *Optimal input potential functions in the interacting particle system method*, Monte Carlo Methods Appl. **27** (2021), pp. 137–152.
242. J. Garnier, K. Baudin, A. Fusaro, and A. Picozzi, *Coherent soliton states hidden in phase-space and stabilized by gravitational incoherent structures*, Phys. Rev. Lett. **127** (2021), 014101.
243. P. Azam, A. Fusaro, Q. Fontaine, J. Garnier, A. Bramati, A. Picozzi, R. Kaiser, Q. Glorieux, and T. Bienaimé, *Dissipation-enhanced collapse singularity of a nonlocal fluid of light in a hot atomic vapor*, Phys. Rev. A **104** (2021), 013515.
244. J. Garnier, *Wave propagation in periodic and random time-dependent media*, SIAM Multiscale Model. Simul. **19** (2021), pp. 1190–1211.

245. J. Garnier, K. Baudin, A. Fusaro, and A. Picozzi, *Incoherent localized structure and hidden coherent solitons from the gravitational instability of the Schrödinger-Poisson equation*, Phys. Rev. E **104** (2021), 054205.
246. L. Borcea and J. Garnier, *Imaging in random media by two-point coherent interferometry*, SIAM J. Imaging Sci. **14** (2021), pp. 1635–1668.
247. L. Borcea, J. Garnier, A. V. Mamonov, and J. Zimmerling, *Reduced order model approach for imaging with waves*, Inverse Problems **38** (2022), 025004.
248. J. Garnier and L. Mertz, *A control variate method driven by diffusion approximation*, Comm. Pure Appl. Math. **75** (2022), pp. 455–492.
249. K. Baudin, J. Garnier, A. Fusaro, N. Berti, G. Millot, and A. Picozzi, *Weak Langmuir turbulence in disordered multimode optical fibers*, Phys. Rev. A **105** (2022), 013528.
250. A. Cousin, J. Garnier, M. Guiton, and M. Munoz-Zuniga, *A two-step procedure for time-dependent reliability-based design optimization involving piece-wise stationary Gaussian processes*, Structural and Multidisciplinary Optimization **65** (2022), 120.
251. J. Garnier and P. Roux, *Modal formulation and paraxial approximation for acoustic wave propagation in waveguides with surface perturbations*, J. Acoust. Soc. Am. **151** (2022), pp. 3239–3254.
252. J. Garnier and K. Sølna, *Scintillation of partially coherent light in time varying complex media*, J. Opt. Soc. Am. A. **39** (2022), pp. 1309–1322.
253. M. V. de Hoop, J. Garnier, and K. Sølna, *System of radiative transfer equations for coupled surface and body waves*, Z. Angew. Math. Phys. **73** (2022), 177.
254. G. Xu, J. Garnier, A. Fusaro, and A. Picozzi, *Background-enhanced collapse instability of optical speckle beams in nonlocal nonlinear media*, Phys. D **434** (2022), 133230.
255. N. Berti, K. Baudin, A. Fusaro, A. Picozzi, and J. Garnier, *Interplay of thermalization and strong disorder: Wave turbulence theory, numerical simulations, and experiments in multimode optical fibers*, Phys. Rev. Lett. **129** (2022), 063901.
256. N. Acharki, A. Bertoncello, and J. Garnier, *Robust Prediction Intervals estimation for Gaussian Processes by Cross-Validation method*, Comput. Stat. Data Anal. **178** (2023), 107597.
257. K. Baudin, J. Garnier, A. Fusaro, N. Berti, C. Michel, K. Krupa, G. Millot, and A. Picozzi, *Observation of light thermalization to negative-temperature Rayleigh-Jeans equilibrium states in multimode optical fibers*, Phys. Rev. Lett. **130** (2023), 063801.
258. L. Borcea, J. Garnier, A. V. Mamonov, and J. Zimmerling, *Waveform inversion with a data driven estimate of the internal wave*, SIAM J. Imaging Sci. **16** (2023), pp. 280–312.
259. J. Garnier and K. Sølna, *Speckle memory effect in the frequency domain and stability in time-reversal experiments*, SIAM Multiscale Model. Simul. **21** (2023), pp. 80–118.
260. L. Borcea, J. Garnier, and K. Sølna, *Paraxial wave propagation in random media with long-range correlations*, SIAM J. Appl. Math. **83** (2023), pp. 25–51.
261. L. Borcea, J. Garnier, A. V. Mamonov, and J. Zimmerling, *Waveform inversion via reduced order modeling*, Geophysics **8** (2023), pp. R175–R191.
262. P. Lartaud, P. Humbert, and J. Garnier, *Multi-output Gaussian processes for inverse uncertainty quantification in neutron noise analysis*, Nuclear Science and Engineering **197** (2023), pp. 1928–1951.
263. J. Garnier, Z. Lu, and L. Mertz, *A piecewise deterministic Markov process based model for dry friction subjected to pure jump noise*, SIAM J. Appl. Math. **83** (2023), pp. 1392–1421.

264. K. Baudin, J. Garnier, A. Fusaro, C. Michel, K. Krupa, G. Millot, and A. Picozzi, *Rayleigh-Jeans thermalization vs beam cleaning in multimode optical fibers*, Opt. Commun. **545** (2023), 129716.
265. J. Garnier, H. Haddar, and H. Montanelli, *The linear sampling method for random sources*, SIAM J. Imaging Sciences **16** (2023), pp. 1572–1593.
266. J. Garnier and K. Sølna, *Fourth-order moments analysis for partially coherent electromagnetic beams in random media*, Waves in Random and Complex Media **33** (2023), pp. 1346–1365.
267. J. Garnier and L. Mertz, *Computing the diffusivity of a particle subject to dry friction with colored noise*, Phys. Rev. E **108** (2023), 045309.
268. M. Vandenboomgaerde, M. Casanova, F. Chaland, M. Bonnefille, A. Grisollet, L. Videau, S. Depierreux, V. Tassin, J-P. Leidinger, C. Courtois, J. Garnier, and H. Chen, *Stationary Bragg reflection of laser light in inhomogeneous absorbing plasmas inside inertial confinement fusion hohlraums*, Phys. Plasmas **30** (2023), 122702.
269. J. Garnier, *Wave propagation in random media: Beyond Gaussian statistics*, ESAIM Proc **74** (2023), pp. 63–89.
270. B. Kerleguer, C. Cannamela, and J. Garnier, *A Bayesian neural network approach to multi-fidelity surrogate modelling*, Int. J. Uncertainty Quantification **14**, No. 1 (2024), pp. 43–60.
271. M. de Hoop, J. Garnier, and K. Sølna, *Three-dimensional random wave coupling along a boundary and an associated inverse problem*, SIAM Multiscale Model. Simul. **2** (2024), pp. 39–65.
272. C. Gauchy, C. Feau, and J. Garnier, *Uncertainty quantification and global sensitivity analysis of seismic fragility curves using kriging*, Int. J. Uncertainty Quantification **14**, No. 4 (2024), pp. 39–63.
273. M. V. de Hoop, J. Garnier, A. Iantchenko, and J. Ricaud, *Inverse problem for Love waves in a layered, elastic half-space*, Inverse Problems **40** (2024), 045013.
274. A. Niclas and J. Garnier, *Automated approach for recovering modal components in shallow waters*, J. Acoust. Soc. Am. **155** (2024), pp. 2347–2358.
275. G. Chennetier, H. Chraibi, A. Dutfoy, and J. Garnier, *Adaptive importance sampling based on fault tree analysis for piecewise deterministic Markov process*, SIAM J. Uncertainty Quantification **12** (2024), pp. 128–156.
276. A. Van Biesbroeck, C. Gauchy, C. Feau, and J. Garnier, *Reference prior for Bayesian estimation of seismic fragility curves*, Probabilistic Engineering Mechanics **76** (2024), 103622.
277. J. Garnier and K. Sølna, *Shower curtain effect and source imaging*, Inverse Problems and Imaging **18** (2024), pp. 993–1023.
278. L. Borcea and J. Garnier, *Enhanced transmission in random media with mirror symmetry*, Proc. R. Soc. A **480** (2024), 20240073.
279. L. Borcea, J. Garnier, A. V. Mamonov, and J. Zimmerling, *When data driven reduced order modeling meets full waveform inversion*, SIAM Review **66** (2024), pp. 501–532.
280. C. Escribe, J. Garnier, and E. Gobet, *A mean field game model for renewable investment under long-term uncertainty and risk aversion*, Dynamic Games and Applications **14** (2024), pp. 1093–1130.
281. J. Garnier, H. Ip, and L. Mertz, *Sensitivity analysis of colored noise-driven interacting particles*, Phys. Rev. E **110** (2024), 044119.
282. J. Garnier, H. Haddar, and H. Montanelli, *The linear sampling method with data generated by small random scatterers*, SIAM J. Imaging Sciences **17** (2024), pp. 2142–2173.

283. L. Zanaglia, J. Garnier, S. Rica, R. Kaiser, S. Wabnitz, C. Michel, V. Doya, and A. Picozzi, *Bridging Rayleigh-Jeans and Bose-Einstein condensation of a guided fluid of light with positive and negative temperatures*, Phys. Rev. A **110** (2024), 063530.
284. P. Lartaud, P. Humbert, and J. Garnier, *Uncertainty quantification in Bayesian inverse problems with neutron and gamma time correlation measurements*, Annals of Nuclear Energy **213** (2025), 111123.
285. J. Garnier and B. Lal Sharma, *Surface waves in randomly perturbed discrete models*, SIAM Multiscale Model. Simul. **23** (2025), pp. 158–186.
286. L. Borcea, J. Garnier, A. V. Mamonov, and J. Zimmerling, *Reduced order modeling for first order hyperbolic systems with application to multiparameter acoustic waveform inversion*, SIAM J. Imaging Sciences **18** (2025), pp. 851–880.
287. J. Garnier, A. Picozzi, and T. Torres, *Stochastic dynamics of incoherent branched flows*, Phys. Rev. Lett. **134** (2025), 223803.
288. M. Ferraro, K. Baudin, M. Gervaziev, A. Fusaro, A. Picozzi, J. Garnier, G. Millot, D. Kharenko, E. Podivilov, S. Babin, F. Mangini, and S. Wabnitz, *Wave turbulence, thermalization and multimode locking in optical fibers*, Physica D **481** (2025), 134758.
289. A. Van Biesbroeck, C. Gauchy, C. Feau, and J. Garnier, *Design of experiments based on a low fidelity model for seismic fragility curves estimation*, ESAIM Proc. **79** (2025), pp. 96–109.
290. A. Abboud, S. de Lambert, J. Garnier, B. Leturcq, and N. Lamorte, *Sensitivity analysis of a flow redistribution model for a multidimensional and multifidelity simulation of fuel assembly bow in a pressurized water reactor*, Nuclear Engineering and Design **443** (2025), 114259.
291. C. Sire, J. Garnier, B. Kerleguer, C. Durantin, G. Defaux, and G. Perrin, *Bayesian calibration for prediction in a multi-output transposition context*, Int. J. Uncertainty Quantification **15** (2025), pp. 37–59.
292. A. Van Biesbroeck, C. Gauchy, C. Feau, and J. Garnier, *Robust a posteriori estimation of probit-lognormal seismic fragility curves via sequential design of experiments and constrained reference prior*, Nuclear Engineering and Design **448** (2026), 114695.
293. L. Borcea and J. Garnier, *Moving targets imaging by SVD of a space-velocity MIMO radar data driven matrix*, IEEE Trans. Comput. Imaging **12** (2026), pp. 172–186.
294. L. Zanaglia, J. Garnier, I. Carusotto, V. Doya, C. Michel, and A. Picozzi, *Spatio-temporal thermalization and adiabatic cooling of guided light waves*, Phys. Rev. Lett. **136** (2026), 053802.
295. P. Lartaud, P. Humbert, and J. Garnier, *Solving Bayesian inverse problems using Gaussian Process Regression with goal-oriented active learning*, Technometrics **68** (2026), pp. 172–185.
296. T. Wasik, V. Barolle, A. Aubry, and J. Garnier, *Taking advantage of multiple scattering for Optical Reflection Tomography*, IEEE Trans. Comput. Imaging **12** (2026), pp. 533–547.
297. J. Garnier, L. Giovangigli, Q. Goepfert, and P. Millien, *Probing the speckle to estimate the effective speed of sound, a first step towards quantitative ultrasound imaging*, Inverse Problems and Imaging **23** (2026), pp. 186–220.

Books

*** X. Buff, J. Garnier, E. Halberstadt, T. Lachand-Robert, F. Moulin, J. Sauloy, E. Ramis, and A. Warusfel, Undergraduate textbook *Mathématiques tout-en-un pour la Licence.*
First volume, L1, Dunod, 2006; second edition, Dunod, 2013; third edition, Dunod, 2018; fourth

edition, 2022.
Second volume, L2, Dunod, 2007.
Third volume, L3, Dunod, 2015; second edition, 2021; third edition, 2024.
*** J.-P. Fouque, J. Garnier, G. Papanicolaou, and K. Sølna, *Wave Propagation and Time Reversal in Randomly Layered Media*, Springer, New York, 2007.
*** H. Ammari, J. Garnier, H. Kang, and K. Sølna, editors, *Mathematical and Statistical Methods for Imaging*, Contemporary Mathematics, AMS, 2011.
*** H. Ammari, J. Garnier, W. Jing, H. Kang, M. Lim, K. Sølna, and H. Wang, *Mathematical and Statistical Methods for Multistatic Imaging*, Lecture Notes in Mathematics, Vol. 2098, Springer, Berlin, 2013.
*** H. Ammari, E. Bretin, J. Garnier, H. Kang, H. Lee, and A. Wahab, *Mathematical Methods in Elasticity Imaging*, Princeton University Press, Princeton, 2015.
*** H. Ammari and J. Garnier, editors, *Inverse Problems and Imaging*, with contributions by L. Borcea, H. Kang, and G. Uhlmann, Panoramas et Synthèses, Vol. 44, Société Mathématique de France, 2015.
*** J. Garnier and G. Papanicolaou, *Passive Imaging with Ambient Noise*, Cambridge University Press, Cambridge, 2016.
*** H. Ammari, J. Garnier, H. Kang, L. Nguyen, and L. Seppecher, *Multi-Wave Medical Imaging: Mathematical Modelling and Imaging Reconstruction*, Modelling and Simulation in Medical Imaging, Vol. 2, World Scientific, London, 2017.

Book chapters

A. J. Garnier, *Wave propagation in one-dimensional random media*, Panoramas et Synthèses **12** (2001), pp. 101–138.
B. F. Kh. Abdullaev, S. A. Darmanyan, and J. Garnier, *Modulational instability of electromagnetic waves in inhomogeneous and discrete media*, Progress in Optics **44** (2002), pp. 303–365.
C. J. Garnier, *Scattering, spreading, and localization of an acoustic pulse by a random medium*, in "Three courses on Partial Differential Equations," edited by E. Sonnendrucker, Walter de Gruyter, Berlin, 2003, pp. 71–123.
D. F. Kh. Abdullaev and J. Garnier, *Optical solitons in random media*, Progress in Optics **48** (2005), pp. 35–106.
E. F. Kh. Abdullaev and J. Garnier, *Bright solitons in Bose-Einstein condensates*, in "Emergent Nonlinear Phenomena in Bose-Einstein Condensates," Springer Series on Atomic, Optical, and Plasma Physics **45**, 2007, pp. 25–43.
F. H. Ammari, J. Garnier, V. Jugnon, and H. Kang, *Direct reconstruction methods in ultrasound imaging of small anomalies*, in "Mathematical Modeling in Biomedical Imaging II," edited by H. Ammari, Lecture Notes in Mathematics, Springer, Berlin, 2012, pp. 31–55.
G. J. Garnier, G. Papanicolaou, and T.-W. Yang, *Diversification in financial networks may increase systemic risk*, in "Handbook on Systemic Risk," edited by J.-P. Fouque and J. A. Langsam, Cambridge University Press, Cambridge, 2013, pp. 432–443.
H. J. Garnier and K. Sølna, *Applications of random matrix theory for sensor array imaging with measurement noise*, in "Random Matrix Theory, Interacting Particle Systems, and Integrable Systems," edited by P. Deift and P. Forrester, Mathematical Sciences Research Institute Publications, Cambridge University Press, New York, 2014, pp. 223–246.

I. A. Picozzi, J. Garnier, G. Xu, and S. Rica, *Introduction to wave turbulence formalisms for incoherent optical waves*, in "Rogue and Shock Waves in Nonlinear Dispersive Media," edited by M. Onorato, S. Resitori, and F. Baronio, Lecture Notes in Physics, Vol. 926, Springer, 2016, pp. 205–276.
J. A. Picozzi, J. Garnier, G. Xu, and G. Millot, *Optical wave turbulence in fibers*, in "Shaping Light in Nonlinear Optical Fibers," edited by S. Boscolo and C. Finot, Wiley, 2017, pp. 351–394.

Proceedings

i. J. Garnier and J.-P. Fouque, *Amplification of incoherent light with wide spectrum*, proceedings of the Third Conference on the Mathematical and Numerical Aspects of Wave Propagation Phenomena, edited by G. Cohen, SIAM-INRIA, 1995, pp. 584–593.
ii. J.-P. Fouque and J. Garnier, *On waves in random media in the diffusion-approximation regime* proceedings of the conference Waves in Random and other Complex Media, edited by R. Burridge, G. Papanicolaou, and L. Pastur, IMA Vol. 96, Springer Verlag, New York, 1997, pp. 31–48.
iii. J. Garnier, L. Videau, C. Gouédard, and A. Migus, *Which optical smoothing for LMJ and NIF ?*, proceedings of the conference Solid state lasers for applications to ICF 1996, edited by M. André and H.T. Powell, SPIE, Vol. 3047, 1997, pp. 260–271.
iv. L. Videau, A. Boscheron, J. Garnier, C. Gouédard, C. Feral, M. Laurent, J. Paye, C. Sauteret, and A. Migus, *Recent results of optical smoothing on the Phebus Laser*, proceedings of the conference Solid state lasers for applications to ICF 1996, edited by M. André and H.T. Powell, SPIE, Vol. 3047, 1997, pp. 757–762.
v. L. Videau, J. Garnier, C. Feral, C. Gouédard, C. Sauteret, and A. Migus, *Spectral broadening and nonlinear limitation of partially incoherent pulses in high power amplifiers*, proceedings of the conference CLEO'97, OSA Technical Digest Series, Vol. 11, 1997, pp. 353–354.
vi. L. Videau, E. Bar, C. Rouyer, C. Gouédard, J. Garnier, and A. Migus, *Control of the amplification of large band amplitude modulated pulses in Nd-glass amplifier chain*, Actes de la conférence Solid state lasers for applications to ICF 1998, édités par W. Howard Lowdermilk, SPIE, Vol. 3492, pp. 277–284.
vii. F. Kh. Abdullaev and J. Garnier, *Modulational instability of electromagnetic waves in randomly perturbed fibers*, Actes de conférence SCT'99 (Solitons, Collapses and Turbulence, Chernogolovka, Moscow region, Russia, 1999).
viii. F. Kh. Abdullaev, J. Garnier, E. Seve, and S. Wabnitz, *Modulational instability in optical fibers with polarization mode dispersion*, proceedings of the conference NLGW'99 (Nonlinear Guided Waves, Dijon, 1999), OSA Technical Digest Series.
ix. J. Garnier and L. Kallel, *How to detect all maxima of a function ?,* proceedings of the conference Second EVONET Summer School on Theoretical Aspects of Evolutionary Computing (Anvers, 1999), Springer, Berlin, 2001, pp. 343-370.
x. J. Garnier and F. Kh. Abdullaev, *Long-range transmission of solitons in random media,* proceedings of the conference Photonics West (San José, 2001), SPIE Proceedings Series, Vol. 4271, 2001, pp. 32–42.
xi. J. Garnier, *Some applications of the anisotropic diffraction in biaxial crystals,* proceedings of the conference Photonics West (San José, 2001), SPIE Proceedings Series, Vol. 4271, 2001, pp. 138–149.

xii. J. Garnier, *Exponential localization versus soliton propagation*, proceedings of the conference Nonlinearity and disorder (Tashkent, 2001), NATO Science Series II, Vol. 45, Kluwer, 2002, pp. 3–17.
xiii. F. Kh. Abdullaev and J. Garnier, *A statistical approach of the decay of a soliton in a randomly perturbed Toda chain*, proceedings of the conference Integrable Field Theories, Solitons and Duality (Sao Paulo, 2002), J. High Energy Physics, Proceedings Series, 2002, unesp2002/001.
xiv. J. Garnier, *Soliton dynamics in randomly perturbed discrete lattices*, proceedings of the conference Nonlinearity Waves: Classical and Quantum Aspects (Lisbonne, 2003), NATO Science Series II, Vol. 153, Kluwer, 2004, pp. 427–441.
xv. J.P. Fouque, J. Garnier, A. Nachbin, and K. Solna, *Imaging of a dissipative layer in a random medium using a time reversal method*, proceedings of the conference Monte Carlo and Quasi-Monte Carlo methods 2004 (Nice, 2004), edited by H. Niederreiter, and D. Talay, Springer, Berlin, 2006, pp. 127–145.
xvi. J. Garnier and G. Papanicolaou, *Travel time estimation by cross correlation of noisy signals*, proceedings of the conference CANUM 2008, edited by C. Besse, O. Goubet, T. Goudon, and S. Nicaise, ESAIM: Proceedings, May 2009, Vol. 27, pp. 122–137.
xvii. J. Garnier and G. Papanicolaou, *Passive imaging using cross correlations of ambient noise signals*, proceedings of the Third International Workshop on Computational Advances in Multi-Sensor Adaptive Processing, edited by IEEE, December 2009, pp. 225–228.
xviii. J. Garnier and K. Sølna, *Passive imaging and detection in cluttered media*, proceedings of the Third International Workshop on Computational Advances in Multi-Sensor Adaptive Processing, edited by IEEE, December 2009, pp. 221–224.
xix. J. Ko, D. Lucor, and J. Garnier, *Mixing layer growth response to inflow forcing with random phaes shift*, proceedings of the ASME 2010 3rd Joint US-European Fluids Engineering Summer Meeting and 8th International Conference on Nanochannels, Microchannels, and Minichannels, August 1-5, 2010, Montreal, paper FEDSM-ICNMM2010-31292.
xx. J. Garnier, *Use of random matrix theory for target detection, localization, and reconstruction*, Contemporary Math., Vol. 548, pp. 1–19 (2011).
xxi. H. Ammari, E. Bretin, J. Garnier, and A. Wahab, *Time reversal in attenuating acoustic media*, Contemporary Math., Vol. 548, pp. 151–163 (2011).
xxii. J. Garnier, *Identification of Green's functions singularities by cross correlation of ambient noise signals*, Séminaire Laurent Schwartz - EDP et Applications (2011-2012), Exposé N^o I, 18 p.
xxiii. H. Ammari, J. Garnier, V. Jugnon, H. Kang, H. Lee, and M. Lim, *Enhancement of near-cloaking. Part III: numerical simulations, statistical stability, and related questions*, Contemporary Math., Vol. 577, pp. 1–24 (2012).
xxiv. M. de Hoop, E. Fedrizzi, J. Garnier, and K. Sølna, *Imaging with noise blending*, Contemporary Math., Vol. 577, pp. 105–124 (2012).
xxv. C. Michel, B. Kibler, G. Xu, J. Garnier, and A. Picozzi, *Long-range incoherent solitons*, proceedings of the 2013 Conference on Lasers and Electro-Optics and International Quantum Electronics Conference, edited by IEEE, May 2013.
xxvi. J. Garnier, *Multiscale analysis of wave propagation in random media. Application to correlation-based imaging*, Séminaire Laurent Schwartz - EDP et applications (2013-2014), Exposé n^o XIII, 19 p.
xxvii. J. Garnier, *Daylight imaging for virtual reflection seismology*, Contemporary Math., Vol.

660, pp. 99–112 (2016).

xxviii. G. Xu, D. Vocke, D. Faccio, J. Garnier, T. Roger, S. Trillo, and A. Picozzi, *Giant collective incoherent shock waves in strongly nonlinear turbulent flows*, proceedings of the 2016 Conference on Lasers and Electro-Optics, OSA Technical Digest (Optical Society of America, 2016), paper FF1A.6.

xxix. M. Gilles, M. Rahmani, J. Garnier, A. Picozzi, M. Guasoni, and J. Fatome, *Universal polarization domain walls in optical fibers as topological bit-entities for data transmission*, proceedings of the Photonics and Fiber Technology 2016 conference, OSA Technical Digest (online) (Optical Society of America, 2016), paper JW6A.6.

xxx. A. Fusaro, J. Garnier, G. Xu, D. Faccio, C. Conti, S. Trillo, and A. Picozzi, *Emergence of long-range phase coherence in nonlocal nonlinear media*, proceedings of the Conference on Lasers and Electro-Optics Europe 2017, edited by IEEE, October 2017.

xxxi. G.-K. Delipei, J. Garnier, J.-C. Le Pallec, and B. Normand, *Multi-physics uncertainties propagation in a PWR rod ejection accident modeling - Analysis methodology and first results*, proceedings of the ANS Best Estimate Plus Uncertainty International Conference (BEPU 2018), Real Collegio, Lucca, Italy, May 13-19, 2018, paper BEPU2018-160.

xxxii. G. Xu, J. Garnier, B. Rumpf, A. Fusaro, P. Suret, S. Randoux, A. Kudlinski, G. Millot, and A. Picozzi, *Catastrophic process of coherence degradation*, proceedings of the Conference Optical Sensors 2018, edited by OSA, July 2018.

xxxiii. J. Garnier, *Multiscale analysis of wave propagation in random media*, Proc. Int. Cong. of Math. (2018) Rio de Janeiro, edited by B. Sirakov, P. N. de Souza, and M. Viana, Vol. 3, pp. 2865–2890.

xxxiv. J. Fournier, J. Garnier, G. Papanicolaou, and C. Tsogka, *Correlation-based imaging of fast moving objects using a sparse network of passive receivers*, proceedings of the 52nd Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, October 28-31, 2018, edited by M. B. Matthews, IEEE Signal Processing Society, paper TPb-5.2, pp. 1618-1622.

xxxv. J. Garnier and K. Sølna, *Beaming through turbulence*, proceedings of the Conference Imaging and Applied Optics 2019, edited by OSA Technical Digest (online) (Optical Society of America, 2019), paper PTh2D.4.

xxxvi. A. Fusaro, J. Garnier, K. Krupa, G. Millot, and A. Picozzi, *Disorder-induced acceleration of condensation in multimode fibers*, proceedings of the Conference on Lasers and Electro-Optics (CLEO) 2019, Munich, edited by IEEE, June 2019.

xxxvii. G.-K. Delipei, J. Garnier, J.-C. Le Pallec, and B. Normand, *Uncertainty analysis methodology for multi-physics coupled rod ejection accident*, proceedings of the ANS International Conference on Mathematics and Computational Methods Applied to Nuclear Science and Engineering, (M&C 2019) Portland, 2019.

xxxviii. K. Baudin, A. Fusaro, K. Krupa, J. Garnier, C. Michel, S. Rica, G. Millot, and A. Picozzi, *Light condensation in multimode fibers*, proceedings of the Conference on Lasers and Electro-Optics (CLEO) 2020, San Jose, edited by IEEE, May 2020.

xxxix. A. Cousin, J. Garnier, M. Guiton, and M. Munoz-Zuniga, *Chance constraint optimization of a complex system - application to the design of a floating offshote wind turbine*, proceedings of the World Congress on Computational Mechanics (WCCM) ECCOMAS Congress 2020, edited by F. Chinesta, R. Abgrall, O. Allix, and M. Kaliske, January 2021.

xl. C. Houpert, J. Garnier, and P. Humbert, *Inverse problems for stochastic neutronics*, proceedings of the 4th ECCOMAS Thematic Conference on Uncertainty Quantification in Computational Sciences and Engineering, edited by M. Papadrakakis, V. Papadopoulos, and G.

Stefanou, June 2021, pp. 63-74.

xli. A. Dhaou, A. Bertoncello, S. Gourvénec, J. Garnier, and E. Le Pennec, *Causal and interpretable rules for time series analysis*, proceedings of the 27th ACM SIGKDD Conference on Knowledge Discovery & Data Mining KDD'21, August 2021, pp. 2764–2772.

xlii. P. Lartaud, P. Humbert, and J. Garnier, *Uncertainty quantification in neutron noise analysis using Monte-Carlo Markov Chain methods: An application to nuclear waste drum assay*, proceedings of the International Conference on Physics of Reactors 2022 (PHYSOR 2022), Pittsburgh, May 15-20, 2022, pp. 2674–2683.

xliii. G. Chennetier, H. Chraibi, A. Dutfoy, and J. Garnier, *Simulation d'événements rares par échantillonnage préférentiel adaptatif pour des processus de Markov déterministes par morceaux*, proceedings des 53èmes Journéees de statistique de la SFdS, juin 2022, pp. 383–388.

xliv. C. Gauchy, C. Feau, and J. Garnier, *Estimation de courbes de fragilité sismique par planification séquentielle d'expériences*, proceedings des 53èmes Journéees de statistique de la SFdS, juin 2022, pp. 389–394.

xlv. A. Mamonov, L. Borcea, J. Garnier, and J. Zimmerling, *Velocity estimation via model order reduction*, proceedings of the conference IMAGE 2022 - International Meeting for Applied Geoscience & Energy, August 28-September 2, 2022.

xlvi. N. Acharki, R. Lugo, A. Bertoncello, and J. Garnier, *Comparison of meta-learners for estimating multi-valued treatment heterogeneous effects*, Proceedings of the 40th International Conference on Machine Learning (ICML2023), Honolulu, Hawaii, USA. PMLR 202, 2023.

xlvii. A. Van Biesbroeck, C. Gauchy, C. Feau, and J. Garnier, *Influence of the choice of the seismic intensity measure on fragility curves estimation in a Bayesian framework based on reference prior*, proceedings of the 5th ECCOMAS Thematic Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP2023) 2023, Eccomas Proceedia UNCECOMP, pp. 94–111.

xlviii. G. Chennetier, H. Chraibi, A. Dutfoy, and J. Garnier, *A fault-tree based importance sampling strategy for piecewise deterministic Markov processes*, proceedings of the 5th ECCOMAS Thematic Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP2023) 2023, Eccomas Proceedia UNCECOMP, pp. 112–124.

ix. P. Lartaud, P. Humbert, and J. Garnier, *Multi-output Gaussian process surrogate models for inverse uncertainty quantification in random neutronics*, proceedings of the 5th ECCOMAS Thematic Conference on Uncertainty Quantification in Computational Sciences and Engineering (UNCECOMP2023) 2023, Eccomas Proceedia UNCECOMP, pp. 165–182.

x. L. Baldassari, A. Siahkoohi, J. Garnier, K. Sølna, and M. V. de Hoop, *Conditional score-based diffusion models for Bayesian inference in infinite dimensions*, Advances in Neural Information Processing Systems (NEURIPS 2023), volume 36, pages 24262–24290, 2023 [featured as a Spotlight presentation].

xi. R. Carpintero Perez, S. Da Veiga, J. Garnier, and B. Staber, *Gaussian process regression with Sliced Wasserstein Weisfeiler-Lehman graph kernels*, International Conference on Artificial Intelligence and Statistics (AISTAT 2024), Proceedings of Machine Learning Research, volume 238, pages 1297-1305, 2024.

xii. R. Carpintero Perez, S. Da Veiga, J. Garnier, and B. Staber, *Learning signals defined on graphs with optimal transport and Gaussian process regression*, International Conference on Artificial Intelligence and Statistics (AISTAT 2025), Proceedings of Machine Learning Research,

volume 258, pages 766-774, 2025.

Preprints

298. L. Baldassari, J. Garnier, K. Sølna, and M. V. de Hoop, *Preconditioned Langevin dynamics with score-based generative models for infinite-dimensional linear Bayesian inverse problems*, to appear in NEURIPS 2025.
299. C. Houpert, J. Garnier, and P. Humbert, *Inverse problems for stochastic neutronics, considering two time gates*, to appear in Nuclear Science and Engineering.
300. J. Garnier and B. Lal Sharma, *Effective dynamics in lattices with random mass perturbations*, to appear in Communications in Mathematical Sciences.