

Curriculum Vitae

Jérémie BOUTTIER

Professor; research fields: combinatorics, mathematical physics, probability theory

Personal data

<i>First name</i>	Jérémie	<i>Address</i>	IMJ-PRG, Sorbonne Université
<i>Last name</i>	Bouttier		4 place Jussieu
<i>Birth</i>	26 April 1979		Boite courrier 247
	in Dijon, France		F-75252 Paris Cedex 5
<i>Nationality</i>	French	<i>Telephone</i>	+33 1 44 27 72 50
<i>Family status</i>	married, 2 children	<i>Email</i>	jeremie.bouttier@imj-prg.fr

Current and past positions

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|-------------------|---|
| Since 2023 | Full professor, Institut de mathématiques de Jussieu - Paris Rive Gauche, Sorbonne Université, Paris
Since April 2025: director of the Institut Henri Poincaré (école interne) |
| 2006-2023 | Permanent researcher, Institut de physique théorique, Commissariat à l'énergie atomique et aux énergies alternatives (CEA), Saclay |
| 2012-2016 | Associate professor (half-time) at Département de mathématiques et applications, École normale supérieure, Paris |
| 2004-2006 | FOM scientist (post-doc) at Instituut voor Theoretische Fysica, Universiteit van Amsterdam |
| 2002-2004 | Ingénieur-élève du corps des Télécommunications, ENST, Paris |
| 1998-2002 | Élève de l'École normale supérieure, Paris
ranked first at the mathematics/physics (C/S) competitive entrance exam |
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Academic qualifications

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| 2019 | Habilitation à diriger des recherches, Université Paris-Sud
Field: Mathematics
Title: <i>Planar maps and random partitions</i> |
| 2005 | Doctorat (PhD), Université Paris 6, mention très honorable (highest honors)
Field: Theoretical Physics
Advisors: P. Di Francesco and E. Guitter (Service de Physique Théorique, CEA)
Title: <i>Physique statistique des surfaces aléatoires et combinatoire bijective des cartes planaires</i> |
| 2004 | Diplôme d'ingénieur de l'École Nationale Supérieure des Télécommunications |

Professional experience

Teaching (research-level minicourses are listed with the talks below)

- Teaching at Sorbonne University:
 - Spring 2025: *Numerical probability and computational statistics* (M1 level tutorials and practical training on computers)
 - Fall 2024: *Combinatorics and graphs* (L2 level lectures and tutorials), *Algorithmic aspects of combinatorics* (M2 level lectures)
 - Spring 2024: *Probabilités II* (L3 level tutorials), *Constructions et raisonnements mathématiques* (L1 level tutorials)
 - Fall 2023: *Combinatorics and graphs* (L2 level lectures and tutorials), *Orientation et insertion professionnelle* (L3 level tutorials), *Algorithmic aspects of combinatorics* (M2 level lectures)
- Course on *Integrable probability*, M2 Advanced Mathematics, Lyon (Winter 2019 and 2020)
- Course on *Rigorous aspects of equilibrium statistical mechanics*, L3 (BSc.) level, École Normale Supérieure, Paris (Spring 2013, 2014 and 2015)
- Other duties at ENS Paris:
 - Fall 2015: supervision of reading groups on *Enumerative combinatorics* (L3 level) and *Local limits of random maps* (M1 level)
 - Management of the math-physics first-year curriculum (2012-2016), organization of the seminar *Des Mathématiques* aimed at students (2013-2015)
- Tutorats (preceptorships) in Mathematical Methods for Physicists at ESPCI, Paris (2009-2012)
- Travaux dirigés (tutorials) in Quantum Mechanics at École Centrale Paris (2011)

Supervision

- PhD students:
 - Thomas Lejeune : started in September 2024, joint supervision with B. Eynard
 - Hugo Manet : started in October 2023, joint supervision with G. Chapuy and E. Guitter
 - Harriet Walsh: defended in October 2022 at ENS de Lyon, joint supervision with G. Chapuy; currently assistant professor at University College Dublin
 - Linxiao Chen: defended in April 2018 at Université Paris-Sud, joint supervision with N. Curien; currently *maître de conférences* (assistant professor) at Université Sorbonne Paris Nord
 - François Nunzi: defended in December 2016 at Université Paris Diderot, joint supervision with S. Corteel; currently teacher in *classes préparatoires*
- postdocs:
 - Sofia Tarricone (2022-2024) : currently *maîtresse de conférences* (assistant professor) at Sorbonne Université

- Joonas Turunen (2020-2022) : currently working in the math finance/insurance industry in Helsinki
- Dan Betae (2015-2016) : currently research and data scientist in Lyon
- Peter Nejjar (2015-2016) : currently Juniorprofessor at Potsdam University
- master/senior/junior students: Thomas de Myttenaere (Sorbonne Université, M1 mathematics, 2024), Timothée Schwartz (*stage d'observation de seconde*, 2024), Loïc Davalo (ENS de Lyon, L3 mathematics, 2022), Zoé Varin (ENS de Lyon, M1 computer science, 2020), Alejandro Caicedo (ENS de Lyon, M2 mathematics, 2019), Louise Gassot and Matthieu Piquerez (ENS Paris, L3 mathematics, 2015)
- mentorship at ENS Paris (personal curricular and career advice): T. Manneville (2012-2014), T. Lehericy (2013-2016), L. Monk (2014-2016), A. Legrand (2015-2016)

Editorship and refereeing

- Editor for *Mathematical Physics, Analysis and Geometry* (since February 2014)
- Member of the program committee of the 34th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2022)
- Journal reviews: Annales de l'Institut Henri Poincaré (B&D); Annals of Probability; Canadian Journal of Mathematics; Combinatorics, Probability and Computing; Combinatorial Theory; Communications in Mathematical Physics; Communications on Pure and Applied Mathematics; Discrete Mathematics; Electronic Journal of Combinatorics; Electronic Journal of Probability; European Journal of Combinatorics; Forum of Mathematics: PiΣ Graphs and Combinatorics; Journal of Algebraic Combinatorics; Journal of Combinatorial Theory Series A; Journal of Physics A: Mathematical and Theoretical; Journal of Statistical Mechanics: Theory and Experiment; Journal of Statistical Physics; Markov Processes and Related Fields; Probability Theory and Related Fields; Random Structures and Algorithms; SIGMA; Transactions of the American Mathematical Society
- Grant reviews: Agence nationale de la recherche (French funding agency); FONDECYT (Chilean funding agency); Nadorowe Centrum Nauki (National Science Center Poland)
- Other reviews: Formal Power Series and Algebraic Combinatorics (conference); Trinity College Junior Research Fellowships

Organization of scientific events

- IMJ-PRG summer school on *Combinatorics and integrable systems*, Paris (2026, with S. Corteel and S. Tarricone)
- Conference *L'esprit des cartes* in the honor of Emmanuel Guitter's 60th birthday, Saclay (15-16 May 2025, with P. Di Francesco, B. Duplantier and B. Eynard)
- Séminaire Combinatoire, Optimisation, et Interactions, IMJ-PRG (starting Spring 2025, with M. Mazzola and S. Tarricone)
- Rencontres de probabilités intégrables, Institut Henri Poincaré, Paris (since Fall 2024, with G. Barraquand, M. Cafasso and A. Occelli)
- Journée de rentrée de l'IMJ-PRG (15 October 2024, with Y. Guiraud)

- Conference *At the crossroads of physics and mathematics : the joy of integrable combinatorics* in the honor of Philippe Di Francesco's 60th birthday, Saclay (24-26 June 2024, with E. Guitter, R. Kedem, P. Zinn-Justin and J.-B. Zuber)
- Workshop on *Computer Algebra for Functional Equations in Combinatorics and Physics*, Institut Henri Poincaré, Paris (4-8 December 2023, with A. Bostan, T. Cluzeau, L. Di Vizio, C. Krattenthaler, P. Lairez and J.-M. Maillard)
- Groupe de travail Quantique de l'IPhT (2022-2023)
- Séminaire de physique mathématique de l'IPhT (2021-2023, with V. Pasquier)
- Conference *A tribute to Krzysztof Gawędzki: a tale of mathematics and physics*, ENS de Lyon (7-10 November 2022, with F. Bouchet, D. Carpentier, L. Chevillard, K. Kozłowski and J.-M. Maillet)
- Mini-school on *Universality in mathematical physics: random geometries, field theories and hydrodynamics*, ENS de Lyon (26-30 September 2022, with O. Blondel, L. Chevillard, C. Garban and G. Miermont)
- Regular organization of the *Journées Cartes* (thematic days on random maps) in various places: IPhT Saclay (24 June 2022, with S. Ramassamy), ENS de Lyon (14 September 2021, with G. Miermont, J. Turunen and H. Walsh), ENS de Lyon (10 November 2015, with G. Miermont), ENS Paris (14 April 2014, with I. Kortchemski), IPhT Saclay (20-21 June 2013, with G. Schaeffer)
- Workshop on *Determinantal and permanental point processes, quantum physics and signal processing*, ENS de Lyon (30 May-10 June 2022, with R. Bardenet, P. Degiovanni, P. Flandrin, A. Hardy, M. Maïda and G. Schehr)
- *Journées Aléa 2022*, CIRM, Marseille (21-25 March 2022, with G. Miermont and P. Nadeau)
- Visite de Cédric Villani à l'IPhT (1 March 2022)
- Séminaire de combinatoire de l'ENS de Lyon (2018-2021, with N. Aubrun, G. Miermont and B. Salvy)
- *Rencontre Lyon-Saclay*, ENS de Lyon (planned on 16-17 December 2019 but postponed due to external circumstances, with S. Aumaître, G. Miermont and C. Pépin)
- Mini-school on *Random maps and the Gaussian free field*, ENS de Lyon (15-19 May 2017, with G. Miermont)
- Winter school on *Combinatorics and Interactions*, CIRM, Marseille (9-13 January 2017, with G. Chapuy and E. Duchi)
- School on *Quantum integrable systems, conformal field theories and stochastic processes*, Institut d'études scientifiques de Cargèse (12-25 September 2016, with I. Corwin, R. Rhodes and V. Vargas)
- Conference on *Random Tilings, Random Processes and Random Geometry*, Galileo Galilei Institute for Theoretical Physics, Florence (22-26 June 2015, with A. Borodin, F. Colomo and R. Kenyon)
- 20th Claude Itzykson conference on *Random Geometry*, Saclay (10-12 June 2015, with F. David and B. Eynard)

- Thematic day on *Random tilings and surfaces* at the workshop *Inhomogeneous Random Systems 2015* (workshop organizers: F. Dunlop, T. Gobron and E. Saada), Institut Henri Poincaré, Paris (28 January 2015)
- Trimester on *Statistical physics, combinatorics and probability: from discrete to continuous models* at Centre Émile Borel of Institut Henri Poincaré, Paris (Sept-Dec 2009, with M. Bousquet-Mélou, G. Miermont and G. Schaeffer)
- IPhT lab symposium, Batz-sur-Mer (15-17 October 2008, with A. Billoire)
- Conformal Lunch Seminar, ITF Amsterdam (2005-2006)

Grants and networks

Current:

- Member of the ANR project CartesEtPlus (2024-2029, 370 kEUR)
- Member of the CNRS international research network *Probabilités intégrables, intégrabilité classique et quantique* (2021-2025, 38kEUR)
- Partner coordinator of the ANR project Dimers (2019-2023, 275kEUR)
- Member of the ANR project COMBINÉ (2019-2023, 275 kEUR)
- Member of GDR IM (*Informatique mathématique*), GT ALÉA (member of steering committee from 2017 to 2022) and GDR MEGA (*Matrices et graphes aléatoires*)

Past:

- France-Berkeley Fund (2020-2022, 12k\$, travel grant for collaboration with S. Corteel)
- Member of the ANR project GRAAL (2014-2020, 411kEUR)
- PEPS Carma (2016, 12 kEUR, specific grant for collaboration with M. Albenque)
- Member of the *Combinatoire à Paris* project funded by the Émergence(s) program of City of Paris (2013-2017, 230kEUR)
- Member of the ANR Young Researchers project Cartaplus (2013-2017, 225 kEUR)
- Member of the European networks ENRAGE (2005-2009) and EUROGRID (2000-2004)
- Partner of the GéoComp project, ACI “Masses de données” (2004-2007)

Visiting positions and extended stays

- International Center for Theoretical Sciences, Bangalore, October-November 2024
- Galileo Galilei Institute for Theoretical Physics, Florence, April 2022
- Laboratoire de Physique, ENS de Lyon, 2016-2021
- Mathematical Research Institute (MATRIX), Creswick, January 2018
- Erwin Schrödinger International Institute for Mathematical Physics, Vienna, October-November 2017
- Galileo Galilei Institute for Theoretical Physics, Florence, June 2015

- Simons Center for Geometry and Physics, Stony Brook, April 2013
- Mathematical Sciences Research Institute, Berkeley, research member, April 2012
- Laboratoire d'Informatique Algorithmique: Fondements et Applications (LIAFA), Paris, academic year 2011-2012
- Erwin Schrödinger International Institute for Mathematical Physics, Vienna, May 2008
- Isaac Newton Institute for Mathematical Sciences, Cambridge, April 2008

Other responsibilities

- Thesis committees: J. Bettinelli (Université Paris-Sud, 26 October 2011), J. Courtiel (Université de Bordeaux, 3 October 2014), T. Selig (Université de Bordeaux, 11 December 2014), L. Richier (Université de Lyon, 30 June 2017), C. Dervieux (Université Paris Diderot, 15 June 2018), A. Carrance (Université de Lyon, 20 September 2019), B. Louf (Université de Paris, 26 June 2020), E. Narmanli (referee, Institut polytechnique de Paris, 23 September 2022), T. Chouteau (Université d'Angers, 20 October 2023), E. Philippe (president, Sorbonne Université, 7 June 2024), I. Yakovlev (Université de Bordeaux, 15 July 2024), T. Buc-d'Alché (Université de Lyon, 8 July 2025); habilitation committee: V. Féray (Université de Lorraine, 21 September 2021)
- Examiner for masters internships: M2 Sciences de la Matière, M2 Mathématiques Avancées (ENS de Lyon)
- Responsibilities at Sorbonne Université and IMJ-PRG: head of the Combinatorics and Optimization team, member of *commission des thèses et habilitations* and *conseil de la licence de mathématiques*
- Responsibilities at CEA: *directeur de recherche* (since 2022), institution representative at EDMH (Doctoral School of Mathematics Hadamard, since 2015), member and secretary of the IPhT scientific committee (2014-2015 and 2022-2023), member of the IPhT computer committee (since 2007), member of the lab general committee and delegate at the council of Direction des Sciences de la Matière (2008-2011).

Publications

Book chapter

- *Enumeration of maps*, invited contribution in The Oxford Handbook of Random Matrix Theory, G. Akemann, J. Baik and P. Di Francesco (eds.), Oxford University Press, 2011.

Popularization

- *La richesse inattendue du problème des plus longues sous-suites croissantes*, Clefs CEA #70, March 2019.

Articles in refereed journals

- [1] *Critical and tricritical hard objects on bicolourable random lattices: exact solutions*
 J. Bouttier, P. Di Francesco and E. Guitter
 J. Phys. A: Math. Gen. 35, 3821–3854 (2002), arXiv:cond-mat/0201213

- [2] *Counting colored random triangulations*
J. Bouttier, P. Di Francesco and E. Guitter
Nucl. Phys. B [FS] 641, 519–532 (2002), arXiv:cond-mat/0206452
- [3] *Census of planar maps: From the one-matrix model solution to a combinatorial proof*
J. Bouttier, P. Di Francesco and E. Guitter
Nucl. Phys. B [PM] 645, 477–499 (2002), arXiv:cond-mat/0207682
- [4] *Combinatorics of hard particles on planar graphs*
J. Bouttier, P. Di Francesco and E. Guitter
Nucl. Phys. B [FS] 655, 313–341 (2003), arXiv:cond-mat/0211168
- [5] *Geodesic distance in planar graphs*
J. Bouttier, P. Di Francesco and E. Guitter
Nucl. Phys. B [FS] 663, 535–567 (2003), arXiv:cond-mat/0303272
- [6] *Random trees between two walls: Exact partition function*
J. Bouttier, P. Di Francesco and E. Guitter
J. Phys. A: Math. Gen. 36, 12349–12366 (2003), arXiv:cond-mat/0306602
- [7] *Statistics of planar graphs viewed from a vertex: A study via labeled trees*
J. Bouttier, P. Di Francesco and E. Guitter
Nucl. Phys. B [FS] 675, 631–660 (2003), arXiv:cond-mat/0307606
- [8] *Planar maps as labeled mobiles*
J. Bouttier, P. Di Francesco and E. Guitter
Elec. Jour. of Combinatorics Vol. 11, R69 (2004), arXiv:math.CO/0405099
- [9] *Combinatorics of bicubic maps with hard particles*
J. Bouttier, P. Di Francesco and E. Guitter
J. Phys. A: Math. Gen. 38, 4529–4559 (2005), arXiv:math.CO/0501344
- [10] *Multicritical continuous random trees*
J. Bouttier, P. Di Francesco and E. Guitter
J. Stat. Mech. P04004 (2006), arXiv:math-ph/0603007
- [11] *Blocked edges on Eulerian maps and mobiles: Application to spanning trees, hard particles and the Ising model*
J. Bouttier, P. Di Francesco and E. Guitter
J. Phys. A: Math. Theor. 40, 7411–7440 (2007), arXiv:math/0702097
- [12] *Vacancy localization in the square dimer model*
J. Bouttier, E. Bowick, E. Guitter and M. Jeng
Phys. Rev. E 76, 041140 (2007), arXiv:0706.1016
- [13] *Statistics of geodesics in large quadrangulations*
J. Bouttier and E. Guitter
J. Phys. A: Math. Theor. 41, 145001 (2008), arXiv:0712.2160
- [14] *The three-point function of planar quadrangulations*
J. Bouttier and E. Guitter
J. Stat. Mech. P07020 (2008), arXiv:0805.2355

- [15] *Confluence of geodesic paths and separating loops in large planar quadrangulations*
J. Bouttier and E. Guitter
J. Stat. Mech. P03001 (2009), arXiv:0811.0509
- [16] *Distance statistics in quadrangulations with a boundary, or with a self-avoiding loop*
J. Bouttier and E. Guitter
J. Phys. A: Math. Theor. 42, 465208 (2009), arXiv:0906.4892
- [17] *Distance statistics in quadrangulations with no multiple edges and the geometry of minibus*
J. Bouttier and E. Guitter
J. Phys. A: Math. Theor. 43, 205207 (2010), arXiv:1002.2552
- [18] *Planar maps and continued fractions*
J. Bouttier and E. Guitter
Comm. Math. Phys. 303:3, 623-662 (2012), arXiv:1007.0419
- [19] *A recursive approach to the $O(n)$ model on random maps via nested loops*
G. Borot, J. Bouttier and E. Guitter
J. Phys. A: Math. Theor. 45, 045002 (2012), arXiv:1106.0153
- [20] *More on the $O(n)$ model on random maps via nested loops*
G. Borot, J. Bouttier and E. Guitter
J. Phys. A: Math. Theor. 45, 275206 (2012), arXiv:1202.5521
- [21] *Loop models on random maps via nested loops: case of domain symmetry breaking and application to the Potts model*
G. Borot, J. Bouttier and E. Guitter
J. Phys. A: Math. Theor. 45, 494017 (2012), arXiv:1207.4878
- [22] *Asymmetric Exclusion Process with Global Hopping*
C. Arita, J. Bouttier, P. Krapivsky and K. Mallick
Phys. Rev. E 88, 042120 (2013), arXiv:1307.4367
- [23] *On irreducible maps and slices*
J. Bouttier and E. Guitter
Combinatorics, Probability and Computing 23, 914–972 (2014), arXiv:1303.3728
- [24] *A note on irreducible maps with several boundaries*
J. Bouttier and E. Guitter
Elec. Jour. of Combinatorics Vol. 21, P1.23 (2014), arXiv:1305.4816
- [25] *On the two-point function of general maps and hypermaps*
J. Bouttier, É. Fusy and E. Guitter
Ann. Inst. Henri Poincaré D 1, 265–306 (2014), arXiv:1312.0502
- [26] *Multivariate juggling probabilities*
A. Ayyer, J. Bouttier, S. Corteel and F. Nunzi
Electron. J. Probab. 20:5 1-29 (2015), arXiv:1402.3752
- [27] *From Aztec diamonds to pyramids: steep tilings*
J. Bouttier, G. Chapuy and S. Corteel
Trans. Amer. Math. Soc. 369:8, 5921–5959 (2017), arXiv:1407.0665

- [28] *Dimers on Rail Yard Graphs*
C. Boutillier, J. Bouttier, G. Chapuy, S. Corteel and S. Ramassamy
Ann. Inst. Henri Poincaré D 4:4, 479–539 (2017), arXiv:1504.05176
- [29] *Bumping sequences and multispecies juggling*
A. Ayyer, J. Bouttier, S. Corteel, S. Linusson and F. Nunzi
Advances in Applied Mathematics 98, 100–126 (2018), arXiv:1504.02688
- [30] *Perfect sampling algorithm for Schur processes*
D. Betea, C. Boutillier, J. Bouttier, G. Chapuy, S. Corteel and M. Vuletić
Markov Processes and Related Fields 24, 381–418 (2018), arXiv:1407.3764
- [31] *The free boundary Schur process and applications I*
D. Betea, J. Bouttier, P. Nejjar and M. Vuletić
Ann. Henri Poincaré 19, 3663–3742 (2018), arXiv:1704.05809
- [32] *The periodic Schur process and free fermions at finite temperature*
D. Betea and J. Bouttier
Math. Phys. Anal. Geom. 22:3 (2019), arXiv:1807.09022
- [33] *Enumeration of planar constellations with an alternating boundary*
J. Bouttier and A. Carrance
Elec. Jour. of Combinatorics Vol. 28, P3.21 (2021), arXiv:2012.14258
- [34] *Bijjective enumeration of planar bipartite maps with three tight boundaries, or how to slice pairs of pants*
J. Bouttier, E. Guitter and G. Miermont
Annales Henri Lebesgue 5, 1035–1110 (2022), arXiv:2104.10084
- [35] *Nesting statistic in the $O(n)$ loop model on random maps*
G. Borot, J. Bouttier and B. Duplantier
Comm. Math. Phys. 404, 1125–1229 (2023), arXiv:1605.02239
- [36] *Multicritical Schur measures and higher-order analogues of the Tracy-Widom distribution*
D. Betea, J. Bouttier and H. Walsh
Math. Phys. Anal. Geom. 27:2 (2024), arXiv:2307.05303
- [37] *On quasi-polynomials counting planar tight maps*
J. Bouttier, E. Guitter and G. Miermont
Combinatorial Theory 4:1 (2024), arXiv:2203.14796

Proceedings

- [P1] *Constellation and multicontinued fractions: application to Eulerian triangulations*
M. Albenque and J. Bouttier
Proceedings of the 24th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2012), DMTCS Proceedings AR 805-816 (2012), arXiv:1112.6379
- [P2] *Multivariate juggling probabilities* (extended abstract)
A. Ayyer, J. Bouttier, S. Corteel and F. Nunzi
Proceedings of the 25th International Conference on Probabilistic, Combinatorial and Asymptotic Methods for the Analysis of Algorithms (AofA 2014)

- [P3] *Some generalized juggling processes*
 A. Ayyer, J. Bouttier, S. Linusson and F. Nunzi
 DMTCS Proceedings, 27th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2015)
- [P4] *The free boundary Schur process and applications* (extended abstract)
 D. Betea, J. Bouttier, P. Nejjar and M. Vuletić
 Proceedings of the 29th International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2017), Sémin. Lothar. Combin. 78B.44 (2017), arXiv:1704.05809v1
- [P5] *New edge asymptotics of skew Young diagrams via free boundaries*
 D. Betea, J. Bouttier, P. Nejjar and M. Vuletić
 Proceedings of the 31st International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2019), Sémin. Lothar. Combin. 82B.32 (2019), arXiv:1902.08750
- [P6] *Multicritical random partitions*
 D. Betea, J. Bouttier and H. Walsh
 Proceedings of the 33rd International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2021), Sémin. Lothar. Combin. 85B.33 (2019), arXiv:2012.01995

Preprints

- *From point processes to quantum optics and back*
 R. Bardenet, A. Feller, J. Bouttier, P. Degiovanni, A. Hardy, A. Rançon, B. Roussel, G. Schehr and C. Westbrook
 arXiv:2210.05522
- *Enumeration of maps with tight boundaries and the Zhukovsky transformation*
 J. Bouttier, E. Guitter and G. Miermont
 arXiv:2406.13528
- *Enumeration of planar bipartite tight irreducible maps*
 J. Bouttier, E. Guitter and H. Manet
 arXiv:2410.08802

Manuscripts in preparation

- *On the slice decomposition of planar hypermaps*
 M. Albenque and J. Bouttier
- *The free boundary Schur process and applications II*
 D. Betea, J. Bouttier, P. Nejjar and M. Vuletić
- *On some tree models related to the Wiener-Hopf factorization, and application to the $O(n)$ loop model on random planar maps*
 J. Bouttier, G. Miermont and J. Turunen
- *On orthogonal polynomials with respect to the Wigner semi-circle distribution perturbed by a polynomial*
 J. Bouttier and S. Tarricone

Talks

Research-level minicourses

- *Non interacting trapped fermions at finite temperature* (with G. Schehr, 1h15 each), online program on Integrability and Combinatorics at Finite Temperature (10 June 2021)
- *Schur processes and free fermions*, 3h, Workshop on Probability and quantum field theory, Porquerolles (11-14 June 2019)
- *Around the Plancherel measure on integer partitions*, 3h30, Journées Aléa, CIRM, Marseille (20-21 March 2019)
- *Equations with one catalytic variable in enumerative combinatorics*, 3h, Workshop on Random matrices, maps, and gauge theories, ENS de Lyon (26-29 June 2018)
- *Recent developments in random planar maps*, 5h, School on Random Geometry and Random Matrices, International Center for Theoretical Physics – South American Institute for Fundamental Research, São Paulo (25-28 August 2014)
- *Geodesics on planar quadrangulations*, 2h, ENRAGE: Random Geometry + Random Matrices Meeting, Oxford (18-19 September 2008)
- *Combinatorics of discrete random surfaces*, 3h, ENRAGE school on Random Matrices and Random Geometry, Barcelona (16-18 April 2007)

Invited international conferences and schools

- Workshop on Discrete Integrable Systems: Difference Equations, Cluster Algebras and Probabilistic Models, ICTS Bangalore (30 October 2024)
- Workshop on Riemann Surfaces: Random, Flat, and Hyperbolic Geometry, Oberwolfach (9 September 2024)
- Mathematical Summer in Paris, online (29 June 2023)
- Third PIICQ Workshop, Angers (26 May 2023)
- Workshop on Random Geometry in Math&Physics, Nijmegen (31 March 2023)
- Workshop on Enumerative Combinatorics, Oberwolfach (14 December 2022)
- Workshop on Randomness, Integrability and Universality, Galileo Galilei Institute for Theoretical Physics, Florence (21 April 2022)
- Conference on Random Geometry, CIRM, Marseille (18 January 2022)
- Workshop on Random Matrices and Integrable Systems, online, Bristol (17 June 2021)
- Workshop on Determinantal point processes and fermions, Lille (7 February 2019)
- Workshop on Randomness and Symmetry, University College Dublin (21 June 2018)
- Workshop on Enumerative Combinatorics, Oberwolfach (16 May 2018)

- Workshop on Enumerative Combinatorics, Erwin Schrödinger Institute, Vienna (19 October 2017)
- Tutte Centenary Conference, Cambridge (11 July 2017)
- School on Random matrices, Park City Mathematics Institute (5 July 2017)
- Workshop on Stochastic Analysis: Geometry of Random Processes, Oberwolfach (1 June 2017)
- Workshop on Large Random Structures in Two Dimensions, Institut Henri Poincaré, Paris (17 January 2017)
- Workshop on Random Trees and Maps : Probabilistic and Combinatorial Aspects, CIRM, Marseille (9 June 2016)
- Workshop on Inhomogeneous Random Systems, Institut Henri Poincaré, Paris (28 January 2015)
- Workshop on 2D Quantum Gravity and Statistical Mechanics, Erwin Schrödinger Institute, Vienna (16 June 2014)
- Workshop on Enumerative Combinatorics, Oberwolfach (4 March 2014)
- Journées de Physique Statistique, ESPCI, Paris (31 January 2014)
- 24th International Conference on Probabilistic, Combinatorial, and Asymptotic Methods in the Analysis of Algorithms [AofA 2013], Menorca (27 May 2013)
- Workshop “Quantum Gravity in Paris 2013”, Orsay (22 March 2013)
- Workshop on Conformal Invariance, Discrete Holomorphicity and Integrability, Helsinki (15 June 2012)
- Workshop on Statistical Mechanics and Conformal Invariance, Mathematical Sciences Research Institute, Berkeley (26 March 2012)
- ESF conference on Combinatorics and Analysis in Spatial Probability, Eindhoven (16 December 2010)
- Workshop on Random Graphs and Networks in Mathematics and Physics, Nordita, Stockholm (3 November 2010)
- Combinatorics and Mathematical Physics conference, Statphys 24 satellite meeting, Brisbane (13 July 2010)
- Workshop on Random Maps and Graphs on Surfaces, Institut Henri Poincaré, Paris (2 November 2009)
- 20th International Conference on Probabilistic, Combinatorial, and Asymptotic Methods in the Analysis of Algorithms [AofA09], Fréjus (18 June 2009)
- Workshop on Random Planar Geometry, Les Diablerets (13 February 2009)
- Workshop on Combinatorics and Statistical Mechanics, Erwin Schrödinger Institute, Vienna (28 May 2008)

- Workshop on Statistical-Mechanics and Quantum-Field Theory Methods in Combinatorial Enumeration, Isaac Newton Institute, Cambridge (21 April 2008)
- Workshop on Enumerative topology and random discrete structures, Institut Henri Poincaré (12 June 2007)
- Colloque “Problèmes combinatoires inspirés par la mécanique statistique”, Congrès de l’ACFAS, Montréal (11 May 2004)
- 4th Eurogrid Meeting – Random geometry : from theory to applications, Les Houches (24 March 2004)
- Eurogrid workshop on Random Geometry, Krakow (15 May 2003)

Invited national meetings

- Colloque *Géométries aléatoires et applications*, Collège de France, Paris (29 January 2025)
- Journées Aléa, CIRM, Marseille (17 March 2023)
- Journée MathStic *Combinatoire et probabilités*, Université Paris-Nord (26 October 2021)
- Journées Cartes, CIRM, Marseille (22 January 2021)
- Journées ANR Dimers, Paris (9 October 2019)
- Workshop Random Graphs and Applications, Saint-Étienne (3 October 2018)
- Journées Aléa, CIRM, Marseille (11 March 2016)
- Workshop MADACA, Orléans (1 October 2015)
- Journée Cartes, ENS de Lyon (14 March 2014)
- ALEA in Europe School, CIRM, Marseille (21 October 2013)
- CEA Theory Forum, Saclay (3 April 2013)
- Journée Cartes, ENS Paris (16 March 2012)
- Journées ANR A3, Nancy (30 March 2011)
- IHÉS-IPhT meeting, Bures-sur-Yvette (18 March 2010)
- Journées de Combinatoire de Bordeaux, LaBRI (5 February 2009)
- Colloque IPhT, Batz-sur-Mer (15 October 2008)
- Journées MAS de la SMAI, Lille (6 September 2006)
- Journées Arbres et Chemins, Bordeaux (25 November 2004)
- Journée thématique “Cartes aléatoires”, Institut Henri Poincaré, Paris (5 March 2003)

Submitted contributions at conferences

- XIX International Congress on Mathematical Physics, Montréal (27 July 2018)
- Workshop on Correlation functions of quantum integrable systems and beyond, ENS de Lyon (23 October 2017)

- Integrability and Combinatorics, a conference in memory of Yuri Stroganov, Presqu'île de Giens (25 June 2014)
- ESF conference on Perspectives in Discrete Mathematics, Barcelona (25 June 2012)
- XXIV International Conference on Statistical Physics of the IUPAP [Statphys 24], Cairns (22 July 2010)
- FOM Decemberdagen, Veldhoven (13 December 2005)
- Journées de Physique Statistique, Paris (24 January 2002)

Seminars

- Séminaire Matrices et graphes aléatoires (MEGA), École polytechnique (12 December 2024)
- Seed Seminar of Mathematics and Physics, Institut Henri Poincaré, Paris (27 March 2024)
- Séminaire de probabilités, LPSM, Paris (27 February 2024)
- Séminaire Itzykson, IHÉS, Bures-sur-Yvette (20 November 2023)
- Mathematical physics seminar, Humboldt Universität zu Berlin (2 May 2023)
- Séminaire de combinatoire de l'IRIF, Paris (5 January 2023)
- Séminaire de physique théorique, ENS de Lyon (5 May 2022)
- IPhT mathematical physics seminar, Saclay (18 October 2021)
- Reading group on Analytic Combinatorics in Several Variables, online (7 October 2021)
- Groupe de travail Combinatoire Énumérative et Algébrique, LaBRI, Bordeaux (10 May 2021)
- Séminaire Géométrie, Analyse et Dynamique/Probabilités et Statistiques, Nice (16 March 2021)
- Séminaire de combinatoire de l'IRIF, Paris (5 March 2020)
- Séminaire du LPTMS, Orsay (7 May 2019)
- Séminaire de combinatoire Philippe Flajolet, IHP, Paris (4 April 2019)
- Oberseminar Stochastics, Bonn (17 January 2019)
- Séminaire tournant de théorie des nombres, Lyon (15 November 2018)
- SISSA Statistical Physics seminar, Trieste (29 May 2018)
- Journée Équipe 4, ENS de Lyon (24 May 2018)
- MATRIX seminar, Creswick, Australia (30 January 2018)
- Informal seminar, IST Austria (3 November 2017)
- Théminaire, ENS de Lyon (9 October 2017)
- Séminaire de Probabilités et Théorie Ergodique, Tours (28 April 2017)
- Groupe de travail Probabilités Intégrables, Lyon (7 April, 29 June and 9 November 2016)

- Colloquium de physique, ENS de Lyon (4 April 2016)
- Mathematical physics seminar, Helsinki (17 February 2016)
- Séminaire de probabilités, ICJ, Lyon (12 November 2015)
- Séminaire de physique théorique, ENS de Lyon (26 February 2015)
- Séminaire du LPTM, Cergy (15 January 2015)
- Integrability and Representation Theory Seminar, University of Illinois at Urbana-Champaign (24 September 2014)
- Groupe de travail Combinatoire, LIX, Palaiseau (12 March 2014)
- Séminaire de probabilités, ENS, Paris (20 January 2014)
- Séminaire de combinatoire, LIPN, Villetaneuse (12 November 2013)
- Séminaire de combinatoire et théorie des nombres, ICJ, Lyon (15 October 2013)
- Groupe de travail “Marches auto-évitantes”, LIAFA, Paris (8 October 2013)
- Séminaire de probabilités, LPMA, Paris (11 June 2013)
- Mathematical Physics seminar, Columbia, New York (22 April 2013)
- Probability seminar, MIT, Cambridge MA (17 April 2013)
- Groupe de travail “Matrices à signes alternants”, LIAFA, Paris (3 talks: 9 & 23 October, 13 November 2012)
- Journée de rentrée du DMA, ENS Paris (1 October 2012)
- String theory seminar, UC Davis (10 April 2012)
- Probability and statistics seminar, ENS Paris (21 March 2012)
- Groupe de travail “Équation KP et combinatoire”, LIAFA, Paris (28 February 2011)
- Groupe de travail “Équation KP et combinatoire”, LIAFA, Paris (6 December 2011)
- Séminaire de combinatoire Philippe Flajolet, IHP, Paris (20 October 2011)
- Séminaire de mathématique physique, Genève (10 October 2011)
- Journée de rentrée du LIAFA, Paris (6 October 2011)
- LIAFA combinatorics seminar, Paris (8 September 2011)
- Algorithms seminar, INRIA, Rocquencourt (29 April 2011)
- Groupe de travail Cartes, Orsay (18 March 2011)
- LPT seminar, École Normale Supérieure, Paris (12 January 2011)
- LIAFA combinatics seminar, Paris (25 November 2010)
- Groupe de travail Cartes, Orsay (10 June 2010)

- IPhT mathematical physics seminar, Saclay (23 March 2009)
- LIX seminar, Palaiseau (21 January 2009)
- Algorithms seminar, INRIA Rocquencourt (29 September 2008)
- Groupe de travail Cartes, Orsay (19 June 2008)
- Groupe de travail Cartes, Orsay (22 March 2007)
- Mark Kac seminar on Probability and Physics, Utrecht (2 June 2006)
- ITF seminar, Amsterdam (23 November 2005)
- SPhT seminar, Saclay (14 November 2005)
- Probability theory seminar, Orsay (1 December 2004)
- CGTI, Paris (30 June 2004)
- Algorithms seminar, INRIA Rocquencourt (26 April 2004)
- ITF seminar, Amsterdam (15 April 2004)
- Journée des thèses du SPhT, Saclay (13 November 2003)
- LPTMS seminar, Orsay (17 December 2002)
- Journée des thèses du SPhT, Saclay (12 November 2002)
- SPhT mathematical physics seminar, Saclay (3 June 2002)
- Journée des thèses du SPhT, Saclay (13 November 2001)