Thibaut Lemoine

Born on 10/07/1991 in Beaumont (63). Address : 3, rue de la Marnière, 95280 Jouy-le-Moutier
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Education & Professional Experience

CRIStAL, CNRS & Université de Lille *Villeneuve-d'Ascq (France)*
Postdoc *2022 - en cours*
- Subject: determinantal point processes and applications
- Mentor: Rémi Bardenet

IRMA, Université de Strasbourg *Strasbourg (France)*
Postdoc *2020 - 2022*
- Subject: geometric aspects of the quantum Hall effect
- Mentor: Semyon Klevtsov

LPSM, Sorbonne Université *Paris (France)*
PhD in mathematics *2016 - 2020*
- Title: Asymptotic representation theory and applications to Yang–Mills theory
- Advisor: Thierry Lévy

Sorbonne Université *Paris (France)*
MSc in Mathematics *2014 - 2016*
- Specialization in "probability and random models"

EDHEC Business School *Lille, Nice (France)*
Business School Diploma *2010 - 2014*
- Specialization in "financial markets"

Papers

Publications

2024. Antoine Dahlqvist, Thibaut Lemoine, *Large N limit of the Yang–Mills measure on compact surfaces II: Makeenko–Migdal equations and planar master field*, arXiv:2201.05886. Accepted in *Forum of Mathematics, Sigma*

2023. Antoine Dahlqvist, Thibaut Lemoine, *Large N limit of Yang–Mills partition function and Wilson loops on compact surfaces*, Probab. Math. Phys. 4, 849–890

2021. Thibaut Lemoine, *Large N behaviour of the two-dimensional Yang–Mills partition function*, Combinatorics, Probability and Computing, 1-22

Preprints

2024. Thibaut Lemoine, Rémi Bardenet, *Monte Carlo methods on compact complex manifolds using Bergman kernels*, arXiv: 2405.09203

2024. Thibaut Lemoine, Mylène Maïda, *Gaussian measure on the dual of $\mathrm{U}(N)$, random partitions, and topological expansion of the partition function*, arXiv:2405.08393

2023. Thibaut Lemoine, *Almost flat highest weights and application to Wilson loops on compact surfaces*, arXiv:2303.11286

2022. Thibaut Lemoine, *Determinantal point processes associated with Bergman kernels: construction and limit theorems*, arXiv:2211.06955

Talks

2024. *Aspects asymptotiques de l'effet Hall quantique entier sur des variétés complexes*. Séminaire de Physique Mathématique, Lyon (France)

2024. *Variables aléatoires gaussiennes discrètes, partitions aléatoires et développement topologique*. Séminaire de probabilité, physique mathématique et analyse, Angers (France)

2024. *Variables aléatoires gaussiennes discrètes, partitions aléatoires et développement topologique*. Séminaire "matrices et graphes aléatoires", Paris (France)

2023. *Le champ maître sur des surfaces compactes*. Séminaire d'analyse harmonique, Orsay (France)

2023. *Monte Carlo methods on complex manifolds using determinantal point processes*. Autumn School of Bayesian Statistics, CIRM, Marseille (France)

2023. *Méthodes de Monte Carlo sur des variétés complexes via les processus déterminantaux*. Séminaire de calcul stochastique, Strasbourg (France)

2023. *Processus ponctuels déterminantaux sur des variétés complexes*. Journées de probabilités, Angers (France)

2023. *Integer Quantum Hall effect on complex manifolds: a probabilistic view*. Geometric and analytic aspects of QHE – SwissMAP Research Station, Les Diablerets (Switzerland)

2023. *Determinantal point processes associated with Bergman kernels: construction and asymptotics*. Seminar in mathematical modelling and analysis, Umeå (Sweden)

2022. *Effet Hall quantique, une approche probabiliste*. GDT "processus ponctuels", Laboratoire Painlevé, Lille (France)

2022. *Grandes déviations de mesures empiriques de mesures de Gibbs sur une surface de Riemann compacte*. GDT "Une approche probabiliste des métriques de Kähler–Einstein", IRMA, Strasbourg (France)

2022. *Large N Limit of Yang–Mills partition function*. Spectra/moduli seminar, Durham (UK)

2022. *The master field on the torus*. 14e rencontres du GDR Dynamique Quantique, IMT, Toulouse (France)

2021. *Introduction aux probabilités non-commutatives*. Séminaire de calcul stochastique, IRMA, Strasbourg (France)

2020. *Noncommutative harmonic analysis of $\mathrm{U}(N)$ and application to $2D$ Yang–Mills theory*. Séminaire d'analyse, IRMA, Strasbourg (France)

2020. *Asymptotics of two-dimensional Yang–Mills partition function*. Bernoulli-IMS One World Symposium

2018. *Calcul stochastique libre par rapport au q-mouvement Brownien*. GDT "probabilités non-commutatives et chemins rugueux", LPSM, Sorbonne Université, Paris (France)

2017. *L'algorithme RSK appliqué aux permutations aléatoires*. GDT "Combinatorics and random matrix theory", Université Paris 7, Paris (France)

Teaching

2024 - 2025	**Masterclass on two-dimensional Yang–Mills theory (M1)**, École Normale Supérieure - PSL, Paris (France)
2024 - 2025	**Tutoring for a course on the spectrum of random hyperbolic surfaces (M1-M2)**, École Normale Supérieure - PSL, Paris (France)
2019 - 2020	**Tutoring in Probability (L3)**, Sorbonne Université, Paris (France)
2019 - 2020	**Tutoring in Probability (1st year)**, ISUP, Paris (France)
2019 - 2020	**Tutoring in General Mathematics (L1)**, Sorbonne Université, Paris (France)
2016 - 2019	**Tutoring in C++ Programming for mathematicians (M1)**, Sorbonne Université, Paris (France)
2016 - 2018	**Tutoring in Vector calculus (L2)**, Polytech' Paris, Paris (France)

Other Activities

Scientific Duties

2025	**Colloquium "géométries aléatoires et application"**, Organization of a colloquium at Collège de France for the chair of spectral geometry	*Paris (France)*
2023	**GDT "théorie de jauge et surfaces aléatoires"**, Organization of a reading group bringing together probabilists and mathematical physicists	*Lille (France)*
2022	**Conference on quantum Hall effect and topological phases**, Co-organization of the conference and making of the website	*Strasbourg (France)*

Extracurricular activities

Since 2015	**Volunteer Firefighter**, Rank : sergeant-chief	*Magny (France)*

Skills

Languages: Franch (native), English (fluent), German (read and written)

Computer Science: C++, LaTeX, Python, Excel/VBA, Matlab/Scilab, Maple