Benoît Collins

Current Address

Department of Mathematics
Graduate School of Science,
Kyoto University,
Kyoto 606-8502,
Japan

Personal Data

Born in Paris, France, december 1977
French Citizen, Permanent Resident
of Japan and Canada
married, 3 children
collins@math.kyoto-u.ac.jp
math.kyoto-u.ac.jp/~collins/

Employment

Kyoto University	Full Professor	April 2021 – present
Kyoto University	Associate Professor	April 2014 – March 2021
University of Ottawa	Associate Professor	July 2011 – June 2015
University of Ottawa	Assistant Professor	January 2006 – June 2011
CNRS (université Lyon 1)	Chargé de recherches (on leave)	October 2005 – present
Kyoto University (RIMS)	COE postdoctoral fellow	May 2005 – December 2005
Kyoto University (Math)	JSPS postdoctoral fellow	May 2003 – May 2005
École Normale Supérieure	AMN (part time teacher)	September 2000 – May 2003
École Normale Supérieure	Normalien (contracted student)	September 1996 – August 2000
Lycée Louis Le Grand	Colleur (TA)	September 1996 – June 1999
Lycée Saint Louis	Colleur (TA)	September 1996 – June 1999

Diplomas

Thèse (Ph.D.)	Paris 6 / ENS Paris	Jan. 2003
Magistère (MSc)	Paris 6 / ENS Paris	July 1998
DEA (M.Sc)	Paris 6	July 1998
Agrégation	ENS Paris	July 1998
Licence & Maîtrise (B. Sc.)	Paris 11 / ENS Paris	July 1997
Baccalauréat	Limoges	July 1994

Education

Thèse (PhD)	Paris 6	October 1999 - January 2003
Magistère (pre-thesis)	Paris 6	September 1998 - September 1999
DEA (MSc)	Paris 6	Occtober 1997-July 1998
Licence-Maitrise (Bsc)	Paris 11	October 1996 - July 1997
École Normale Supérieure	Paris Ulm	September 1996 - August 2000
CPGE (preparatory class)	Louis-le-Grand	July 1996 - July 1998

Research areas

My research interests gravitate around *Random Matrix Theory* and the applications thereof. Free Probability, Quantum Information Theory, Operator Algebras, Probability Theory, Mathematical Physics, Quantum Groups, Asymptotic representation theory, are fields that appear in my research outcome.

Awards and Honors

2024: Chaire Jean Morlet.
2023: Fall prize of the Mathematical Society of Japan.
2022: Recipient of the 19th (FY2022) JSPS Prize.
2022: Invited speaker, virtual International Congress of Mathematicians.
2013: Takebe prize.

2012: G de B Robinson award.
2010: Ontario's Early Research Award.

Editorial Service

- 2013/4 – now: Annales Blaise Pascal (associate editor)
- 2013/8 – 2021/10: Annales Scientifiques de l'Institut Henri Poincaré B (associate editor)
- 2014/12 – 2019/12: Scientiae Mathematicae Japonicae (associate editor)
- 2015/08 – now: Journal of Mathematical Physics (associate editor)
- 2018/12 – now: Letters in Mathematical Physics (associate editor)
- 2019/12 – now: Canadian Journal of Mathematics (associate editor)
- 2021/04 – now: Kyoto Journal of Mathematics (associate editor)
- 2022/01 – now: IDAQP (associate editor)
- 2022/08 – now: Probability Theory and Related Fields (associate editor)
- 2022/12 – now: Journal of Theoretical Probability (associate editor)

Courtesy / visiting appointments

CRM (Montreal)	Simons CRM professor (declined)	March 2019
ENS (Paris)	Visiting Professor	January 2018
IHP (Paris)	Visiting Professor	Sept-Dec 2017
IHP (Paris)	Visiting Professor (declined)	March 2017
University of Ottawa	Adjunct Professor	July 2015 – present
University of Waterloo	Adjunct Professor	July 2015 – 2018
Tohoku University	Visiting Professor	April 2013 – March 2014
Kyoto University (RIMS)	Visiting Associate Professor	Oct-dec 2011
Mittag-Leffler Institute	Visiting Professor	November 2010
Nagoya University	Visiting Scholar	October 2010
Wroclaw University	Marie Curie Fellow	May June 2009
The University of Tokyo	Visiting Associate Professor	Sept 2008 – Mar 2009

Selected Publications – the following is a subjective selection of publications by importance, covering most of my research interests (one paper per research theme):

- *Random graphs, Operator Algebra, Combinatorics:* Bordenave, Collins. Eigenvalues of random lifts and polynomials of random permutation matrices, Annals of Mathematics Pages 811-875 from Volume 190 (2019), Issue 3
- *Quantum Algebra, Operator Algebras:* Brannan, Collins. Dual bases in Temperley-Lieb algebras, quantum groups, and a question of Jones, Quantum Topol. 9 (2018), no. 4, 715-748
- *Representation theory, Random Matrix Theory:* Collins, Novak, Śniady. Semiclassical asymptotics of $GL_N(\mathbb{C})$ tensor products and quantum random matrices, Sel. Math. New Ser. **24** (2018), no. 3, 2571-2623
- *Quantum Information Theory, Probability theory, Free probability theory:* Belinschi, Collins, Nechita. Eigenvectors and eigenvalues in a random subspace of a tensor product, Invent. Math. 190 (2012), no. 3, 647-697
- *Random Matrix Theory, Free probability theory:* Collins, Male. The strong asymptotic freeness of Haar and deterministic matrices Ann. Sci. Éc. Norm. Supér. (4) 47 (2014), no. 1, 147-163
- *Operator Theory, Intersection theory:* Bercovici, Collins, Dykema, Li, Timotin. Intersections of Schubert varieties and eigenvalue inequalities in an arbitrary finite factor, J. Funct. Anal. 258 (2010), no. 5, 1579-1627
- *Quantum groups, integrable systems:* Banica, Collins, Zinn-Justin. Spectral analysis of the free orthogonal matrix, Int. Math. Res. Not. IMRN 2009, no. 17, 3286-3309
- *Quantum groups, homology:* Collins, Härtel, Thom. Homology of free quantum groups C. R. Math. Acad. Sci. Paris 347 (2009), no. 5-6, 271-276

- *Matrix Integrals, Mathematical physics, combinatorics:* Collins, Guionnet, Maurel-Segala. Asymptotics of unitary and orthogonal matrix integrals, Adv. Math. 222 (2009), no. 1, 172-215
- *Random Matrix Theory, Weingarten calculus:* Collins. Moments and cumulants of polynomial random variables on unitary groups, the Itzykson-Zuber integral, and free probability Int. Math. Res. Not. 2003, no. 17, 953-982

Bibliometrics

Mathscinet data (April 2024): 85 published papers, 1407 citations
Google scholar data (May 2023): Citations, 4016, h-index 31

Submitted preprints

Collins, Giordano, Sato: *Variations on quantum de Finetti theorems and operator valued Martin boundaries: a Choquet-Deny approach*, arXiv:2402.09713.

Collins, Fujie, Hasebe, Leid, Sakuma: *Fluctuations of eigenvalues of a polynomial on Haar unitary and finite rank matrices*, arXiv:2309.15396.

Bordenave, Collins: *Norm of matrix-valued polynomials in random unitaries and permutations*, arXiv:2304.05714.

Collins: *Moment Methods on compact groups: Weingarten calculus and its applications*, arXiv:2207.08418.

Collins, Leid, Sakuma: *Matrix models for cyclic monotone and monotone independences*, arXiv:2202.11666.

Accepted Publications (complete list)

(1) **Bordenave, Collins**: *Strong asymptotic freeness for independent uniform variables on compact groups associated to non-trivial representations*, Inventiones mathematicae (2024) **237**, no. 1, 221-–273.

(2) **Collins, Gurau, Lionni**: *The tensor Harish–Chandra–Itzykson–Zuber integral II: detecting entanglement in large quantum systems*, Communications in Mathematical Physics (2023) **401**, 669-–716.

(3) **Collins, Metcalfe**: *Gelfand-Tsetlin polytopes and random contractions away from the limiting shapes*, Annales de la Faculté des sciences de Toulouse: Mathématiques, Serie 6, Volume **32** (2023) no. 3, pp. 423-533.

(4) **Collins, McSwiggen**: *Projections of Orbital Measures and Quantum Marginal Problems*, Transactions of the American Mathematical Society (2023) **376**, 5601–5640.

(5) **Collins, Yin, Zhao, Zhong**: *The spectrum of local random Hamiltonians*, Journal of Physics A: Mathematical and Theoretical (2023) **56**, no. 3: 035201.

(6) **Collins, Gaudreau Lamarre, Male**: *Asymptotic Freeness of Unitary Matrices in Tensor Product Spaces for Invariant States*, Random Matrices: Theory and Applications (2023) **12**, no. 02: 2250052.

(7) **Collins, Gurau, Lionni**: *The tensor Harish-Chandra-Itzykson-Zuber integral I: Weingarten calculus and a generalization of monotone Hurwitz numbers*, Journal of the European Mathematical Society (2023), DOI 10.4171/JEMS/1315.

(8) **Collins, Mai, Miyagawa, Parraud, Yin**: *Convergence for noncommutative rational functions evaluated in random matrices*, Mathematische Annalen (2022), 1–32.

(9) **Collins, Parraud**: *Concentration estimates for random subspaces of a tensor product, and application to Quantum Information Theory*, Journal of Mathematical Physics (2022) **63**, no. 10, 102202.

(10) **Cadilhac, Collins**: *A metric characterization of freeness*, Journal of Functional Analysis (2022), 109562.

(11) **Cleve, Collins, Liu, Paulsen**: *Constant gap between conventional strategies and those based on C*-dynamics for self-embezzlement*, Quantum (2022) **6**, 755.

(12) **Collins, Yao, Yuan**: *On spectral distribution of sample covariance matrices from large dimensional and large k-fold tensor products*, Electronic Journal of Probability (2022) **27**, 1-18.

(13) **Collins, Youn**: *Additivity violation of the regularized Minimum Output Entropy*, Documenta Mathematica 1299-1320 (2022).

(14) **Collins, Hayase**: *Asymptotic Freeness of Layerwise Jacobians Caused by Invariance of Multilayer Perceptron: The Haar Orthogonal Case*, Communications in Mathematical Physics (2022), 1-25.

(15) **Collins, Matsumoto, Novak**: *The Weingarten Calculus*, NOTICES OF THE AMERICAN MATHEMATICAL SOCIETY (2022) **69**, no. 5.

(16) **Collins, Guionnet, Parraud**: *On the operator norm of non-commutative polynomials in deterministic matrices and iid GUE matrices*, Cambridge Journal of Mathematics Volume 10, Number 1, 195–260, 2022.

(17) **Charlesworth, Collins**: *Matrix models for ε-free independence*, Archiv der Mathematik **116** (2021), no. 5: 585-600.

(18) **Collins, Kumari, Pestov**: *Universal consistency of the k-NN rule in metric spaces and Nagata dimension*, ESAIM: Probability and Statistics **24** (2020), 914–934.

(19) **Bardet, Collins, Sapra**: *Characterization of equivariant maps and application to entanglement detection*, Annales Henri Poincaré **21** (2020), no. 10, 3385–3406.

(20) **Brannan, Collins, Lee, Youn**: *Temperley-Lieb quantum channels*, Communications in Mathematical Physics **376** (2020), no. 2, 795–839.

(21) **Brannan, Collins**: *Entanglement and the Temperley-Lieb category*, Topological Phases of Matter and Quantum Computation **747** (2020), 27–50.

(22) **Collins, Magee, Puder**: *Automorphism-invariant positive definite functions on free groups*, in Proceedings of the 27th International Conference in Operator Theory (OT27). (2020), Amer. Math. Soc..

(23) **Bordenave, Collins**: *Eigenvalues of random lifts and polynomials of random permutation matrices*, Annals of Mathematics **190** (2019), Issue 3, 811–875.

(24) **Brannan, Collins**: *Dual bases in Temperley-Lieb algebras, quantum groups, and a question of Jones*, Quantum Topol. **9** (2018), no. 4, 715–748.

(25) **Collins, Yin, Zhong**: *The PPT square conjecture holds generically for some classes of independent states*, J. Phys. A **51** (2018), no. 42, 425301.

(26) **Collins, Osaka, Sapra**: *On a family of linear maps from $M_n(\mathbb{C})$ to $M_{n^2}(\mathbb{C})$*, Linear Algebra Appl. **555** (2018), 398–411.

(27) **Collins, Novak, Śniady**: *Semiclassical asymptotics of $GL_N(\mathbb{C})$ tensor products and quantum random matrices*, Sel. Math. New Ser. **24** (2018), no. 3, 2571–2623.

(28) **Collins, Hasebe, Sakuma**: *Free probability for purely discrete eigenvalues of random matrices*, J. Math. Soc. Japan **12** (2018), No. 3, 1111–1150.

(29) **Collins, Matsumoto**: *Weingarten calculus via orthogonality relations: new applications*, ALEA, Lat. Am. J. Probab. Math. Stat. **14** (2017), no. 1, 631–656.

(30) **Collins**: *Haagerup's inequality and additivity violation of the minimum output entropy*, Houston J. Math. **44** (2018), no. 1, 253–261.

(31) **Brannan, Collins**: *Highly entangled, non-random subspaces of tensor products from quantum groups*, Comm. Math. Phys. **358** (2018), no. 3, 1007–1025.

(32) **Collins, Dahlqvist, Kemp**: *The spectral edge of unitary Brownian motion*, Probab. Theory Related Fields **170** (2018), no. 1–2, 49–93.

(33) **Collins, Kousha, Kulik, Szarek, Życzkowski**: *The accessibility of convex bodies and derandomization of the hit and run algorithm*, J. Convex Anal. **24** (2017), no. 3, 903–916.

(34) **Collins, Matsumoto**: *Weingarten calculus via orthogonality relations: new applications*, ALEA Lat. Am. J. Probab. Math. Stat. **14** (2017), no. 1, 631–656.

(35) **Szymański, Collins, Szarek, Życzkowski**: *Convex set of quantum states with positive partial transpose analysed by hit and run algorithm*, J. Phys. A: Math. Theor. **50** (2017), no. 25, 255206.

(36) **Brannan, Collins, Vergnioux**: *The Connes embedding property for quantum group von Neumann algebras*, Trans. Amer. Math. Soc. **369** (2017), no. 6, 3799–3819.

(37) **Collins, Gaudreau Lamarre**: *∗-freeness in finite tensor products*, Adv. in Appl. Math. **83** (2017), 47–80.

(38) **Belinschi, Collins, Nechita**: *Almost one bit violation for the additivity of the minimum output entropy*, Comm. Math. Phys. **341** (2016), no. 3, 885–909.

(39) **Collins, Nechita**: *Random matrix techniques in quantum information theory*, J. Math. Phys. **57** (2016), no. 1, 015215.

(40) **Bercovici, Collins, Dykema, Li**: *Characterization of singular numbers of products of operators in matrix algebras and finite von Neumann algebras*, Bull. Sci. Math. **139** (2015), no. 4, 400–419.

(41) **Collins, Fukuda, Nechita**: *On the convergence of output sets of quantum channels*, J. Operator Theory **73** (2015), no. 2, 333–360.

(42) **Collins, Fukuda, Zhong**: *Estimates for compression norms and additivity violation in quantum information*, Internat. J. Math. **26** (2015), no. 1, 1550002.

(43) **Collins, Male**: *The strong asymptotic freeness of Haar and deterministic matrices*, Ann. Sci. Éc. Norm. Supér. (4) **47** (2014), no. 1, 147–163.

(44) **Collins, Gawron, Litvak, Życzkowski**: *Numerical range for random matrices*, J. Math. Anal. Appl. **418** (2014), no. 1, 516–533.

(45) **Collins, Matsumoto, Saad**: *Integration of invariant matrices and moments of inverses of Ginibre and Wishart matrices*, J. Multivariate Anal. **126** (2014), 1–13.

(46) **Collins, Lee, Śniady**: *Dimensions of components of tensor products of representations of linear groups with applications to Beurling-Fourier algebras*, Studia Math. **220** (2014), no. 3, 221–241.

(47) **Collins, Kemp**: *Liberation of projections*, J. Funct. Anal. **266** (2014), no. 4, 1988–2052.

(48) **Collins, Nechita, Życzkowski**: *Area law for random graph states*, J. Phys. A **46** (2013), no. 30, 305302.

(49) **Collins, González-Guillén, Pérez-García**: *Matrix product states, random matrix theory and the principle of maximum entropy*, Comm. Math. Phys. **320** (2013), no. 3, 663–677.

(50) **Collins, Fukuda, Nechita**: *Low entropy output states for products of random unitary channels*, Random Matrices Theory Appl. **2** (2013), no. 1, 1250018.

(51) **Banica, Bichon, Collins, Curran**: *A maximality result for orthogonal quantum groups*, Comm. Algebra **41** (2013), no. 2, 656–665.

(52) **Belinschi, Collins, Nechita**: *Eigenvectors and eigenvalues in a random subspace of a tensor product*, Invent. Math. **190** (2012), no. 3, 647–697.

(53) **Collins, Nechita, Ye**: *The absolute positive partial transpose property for random induced states*, Random Matrices Theory Appl. **1** (2012), no. 3, 1250002.

(54) **Collins, Fukuda, Nechita**: *Towards a state minimizing the output entropy of a tensor product of random quantum channels*, J. Math. Phys. **53** (2012), no. 3, 032203.

(55) **Collins, Dykema**: *Free products of sofic groups with amalgamation over monotileably amenable groups*, Münster J. Math. **4** (2011), 101–117.

(56) **Życzkowski, Penson, Nechita, Collins**: *Generating random density matrices*, J. Math. Phys. **52** (2011), no. 6, 062201.

(57) **Collins, Dykema**: *A nonconvex asymptotic quantum Horn body*, New York J. Math. **17** (2011), 437–444.

(58) **Collins, Nechita**: *Gaussianization and eigenvalue statistics for random quantum channels (III)*, Ann. Appl. Probab. **21** (2011), no. 3, 1136–1179.

(59) **Banica, Belinschi, Capitaine, Collins**: *Free Bessel laws*, Canad. J. Math. **63** (2011), no. 1, 3–37.

(60) **Banica, Collins, Schlenker**: *On polynomial integrals over the orthogonal group*, J. Combin. Theory Ser. A **118** (2011), no. 3, 778–795.

(61) **Collins, Nechita**: *Random quantum channels II: entanglement of random subspaces, Rényi entropy estimates and additivity problems*, Adv. Math. **226** (2011), no. 2, 1181–1201.

(62) **Banica, Collins, Schlenker**: *On orthogonal matrices maximizing the 1-norm*, Indiana Univ. Math. J. **59** (2010), no. 3, 839–856.

(63) **Collins, Nechita**: *Eigenvalue and entropy statistics for products of conjugate random quantum channels*, Entropy **12** (2010), no. 6, 1612–1631.

(64) **Collins, Nechita, Życzkowski**: *Random graph states, maximal flow and Fuss-Catalan distributions*, J. Phys. A **43** (2010), no. 27, 275303.

(65) **Collins, Nechita**: *Random quantum channels I: graphical calculus and the Bell state phenomenon*, Comm. Math. Phys. **297** (2010), no. 2, 345–370.

(66) **Collins, Dykema, Torres-Ayala**: *Sum-of-squares results for polynomials related to the Bessis-Moussa-Villani conjecture*, J. Stat. Phys. **139** (2010), no. 5, 779–799.

(67) **Bercovici, Collins, Dykema, Li, Timotin**: *Intersections of Schubert varieties and eigenvalue inequalities in an arbitrary finite factor*, J. Funct. Anal. **258** (2010), no. 5, 1579–1627.

(68) **Collins, Matsumoto**: *On some properties of orthogonal Weingarten functions*, J. Math. Phys. **50** (2009), no. 11, 113516.

(69) **Collins, Härtel, Thom**: *Homology of free quantum groups*, C. R. Math. Acad. Sci. Paris **347** (2009), no. 5–6, 271–276.

(70) **Banica, Collins, Zinn-Justin**: *Spectral analysis of the free orthogonal matrix*, Int. Math. Res. Not. IMRN (2009), no. 17, 3286–3309.

(71) **Collins, Guionnet, Maurel-Segala**: *Asymptotics of unitary and orthogonal matrix integrals*, Adv. Math. **222** (2009), no. 1, 172–215.

(72) **Collins, Dykema**: *On a reduction procedure for Horn inequalities in finite von Neumann algebras*, Oper. Matrices **3** (2009), no. 1, 1–40.

(73) **Collins, Śniady**: *Representations of Lie groups and random matrices*, Trans. Amer. Math. Soc. **361** (2009), no. 6, 3269–3287.

(74) **Collins, Dykema**: *A linearization of Connes' embedding problem*, New York J. Math. **14** (2008), 617–641.

(75) **Banica, Collins**: *Integration over the Pauli quantum group*, J. Geom. Phys. **58** (2008), no. 8, 942–961.

(76) **Collins, Stolz**: *Borel theorems for random matrices from the classical compact symmetric spaces*, Ann. Probab. **36** (2008), no. 3, 876–895.

(77) **Banica, Bichon, Collins**: *Quantum permutation groups: a survey*, Banach Center Publ. **78** (2007), 13–34.

(78) **Banica, Bichon, Collins**: *The hyperoctahedral quantum group*, J. Ramanujan Math. Soc. **22** (2007), no. 4, 345–384.

(79) **Banica, Collins**: *Integration over compact quantum groups*, Publ. Res. Inst. Math. Sci. **43** (2007), no. 2, 277–302.

(80) **Collins, Śniady**: *New scaling of Itzykson-Zuber integrals*, Ann. Inst. H. Poincaré Probab. Statist. **43** (2007), no. 2, 139–146.

(81) **Collins, Mingo, Śniady, Speicher**: *Second order freeness and fluctuations of random matrices. III. Higher order freeness and free cumulants*, Doc. Math. **12** (2007), 1–70.

(82) **Banica, Collins**: *Integration over quantum permutation groups*, J. Funct. Anal. **242** (2007), no. 2, 641–657.

(83) **Collins, Śniady**: *Integration with respect to the Haar measure on unitary, orthogonal and symplectic group*, Comm. Math. Phys. **264** (2006), no. 3, 773–795.

(84) **Collins**: *Product of random projections, Jacobi ensembles and universality problems arising from free probability*, Probab. Theory Related Fields **133** (2005), no. 3, 315–344.

(85) **Collins**: *Martin boundary theory of some quantum random walks*, Ann. Inst. H. Poincaré Probab. Statist. **40** (2004), no. 3, 367–384.

(86) **Collins**: *Moments and cumulants of polynomial random variables on unitary groups, the Itzykson-Zuber integral, and free probability*, Int. Math. Res. Not. 2003, no. 17, 953–982.

Other Manuscripts

Cioppa, Collins: *Matrix Units in the Symmetric Group Algebra, and Unitary Integration*, arXiv:1307.4766.

Collins, McDonald, Saad: *Compound Wishart Matrices and Noisy Covariance Matrices: Risk Underestimation*, arXiv:1306.5510.

Collins, Śniady: *Asymptotic fluctuations of representations of the unitary groups*, arXiv:0911.5546.

- 2014: ANR StoQ ANR-14-CE25-0003 "Stochastic Methods in Quantum Mechanics" (PI: Stéphane Attal): *386,022 EUR*.
- 2013: Junior PI at AIMR, Sendai: *5,000,000 JPY*.
- 2010: Ontario's Early Research Award ER09-06-172 "Random Matrices and their applications to Quantum Information Theory": *150,000 CAD*.
- 2010: NSERC Discovery grant "Applications of random matrix theory to quantum information theory and operators algebras": *100,000 CAD*.
- 2008: ANR GRANMA ANR-08-BLAN-0311 "Grandes matrices aléatoires"(PI: A. Guionnet): *340,000 EUR*.
- 2007: ANR GALOISINT ANR-07-BLAN-0229 "Groupes quantiques : techniques galoisiennes et d'integration" (PI: J. Bichon): *154,000 EUR*.
- 2007: NSERC Discovery grant "Applications of random matrix theory to probabilistic aspects of operator algebras": *60,000 CAD*.
- 2006: University of Ottawa startup grant: *25,000 CAD*.
- 2005: COE research grant, Kyoto RIMS: *600,000 JPY*.
- 2003: JSPS research grant-in-aid: *2,400,000 JPY*.
- 2000: MSRI/DMA grant to visit MSRI during 2 months (host: Dan Voiculescu): *10,000 USD*.

Invited Talks

The list below contains only information about my invited talks (seminar, conferences, colloquium). Local activity, informal and contributed talks are not displayed.

(1) **23 January 2024** *Random Matrices and Free Probability*. - 2024 TMS Annual Meeting - National Chengchi University, Taiwan (online)

(2) **10 January 2024** *Lectures on Free Probability for Quantum Information Theory*. - Quantum Information Theory and Free Probability - New York University Abu Dhabi, UAE

(3) **20 December 2023** *Extensions of quantum de Finetti theorems and operator valued Martin Boundaries*. - ancg : Noncommutative analysis on groups and quantum groups - University of Franche-Comté, France

(4) **19 October 2023** *Random Matrix Theory (a moment point of view)*. - Connections Workshop: Stochastic Processes and Related Fields - Kyoto University, Japan

(5) **21 September 2023** *Random Matrices and Free Probability*. - MSJ Autumn Meeting 2023 - Tohoku University, Japan

(6) **5 September 2023** *On the norm of random matrices with a tensor structure*. - Stochastic Processes and Related Fields - Kyoto University, Japan

(7) **30 August 2023** *On the norm of random matrices with a tensor structure*. - Workshop on random matrix theory and high dimensional statistics for complex system - University of Luxembourg, Luxembourg

(8) **26 July 2023** *On the operator norm of random tensors*. - Operator Algebras and Mathematical Physics - the University of Tokyo, Japan

(9) **25 April 2023** *Around the joint behaviour of independent random tensor matrices*. - Non-commutative Geometry meets Topological Recursion - University of Vienna, Austria

(10) **25 January 2023** *The operator norm of random matrices*. - 5th Bangkok workshop on Discrete Geometry, Dynamics and Statistics - Chulalongkorn University, Thailand

(11) **19 December 2022** *New results around the norm of random matrices and operator-valued non-backtracking theory*. - Geneva MP seminar - Geneva, Switzerland

(12) **7 November 2022** *ε freeness and quantum physics*. - Non-Commutative Probability and Related Topics 2022 - Hokkaido University, Japan

(13) **18 October 2022** *Title: convergence of the spectrum of random matrices in the context of rational fractions* - UCSD seminar – Online

(14) **12 October 2022** *Matrix integrals in a tensor setup*. - Bielefeld - Melbourne Zufallsmatrizen – Online

(15) **28 September 2022** *Properties of random tensor matrices with some applications to Quantum Information Theory.* - Functional Analysis Seminar - Institute for Advanced Study in Mathematics of HIT, Harbin, China – online

(16) **9 September 2022** *Matrix models for cyclic monotone and monotone independences.* - SIMA 2022 - CIMAT, Guanajuato, México.

(17) **17 June 2022** *Centered Weingarten calculus and centered Wick calculus* - Fields Workshop on Noncommutative Geometry, Free Probability Theory and Random Matrix Theory (online).

(18) **1 June 2022** *Strong convergence* - Northwestern Nemmers conference.

(19) **14 March 2022** *Strong convergence for random tensors* - CIRM – conference on random tensors (online).

(20) **09 March 2022** *An overview of Random Matrix Theory and its applications* - FoPM Seminar Tokyo U (online).

(21) **31 January 2022** *A metric characterization of freeness.* seminar - QGS: Quantum Groups Seminar (online).

(22) **13 December 2021** *An introduction to Weingarten calculus.* seminar - the group of theoretical physics in Krakow - Poland (online).

(23) **28 September 2021** *A metric characterization of freeness.* Recent Developments in Operator Algebras - RIMS - Kyoto (online).

(24) **27 August 2021** *On the norm convergence of multi matrix random matrix models.* International Workshop on Operator Theory and its Applications - Lancaster University (online).

(25) **4 August 2021** *On the operator norm of tensors.* Structured Random Matrices in Down Under: New Developments and Applications - MATRIX - Melbourne (online).

(26) **1 July 2021** *Weingarten calculus for tensors.* Tensors and applications - Sakura project: Random matrices and tensors for quantum information and machine learning - online.

(27) **29 March 2021** *Matrix models for non-commutative rational functions.* Global NCG Seminar - online.

(28) **17 March 2021** *A metric characterization of freeness.* Operator Algebras and Operator Theory Seminar - Seoul National University (online).

(29) **15 March 2021** *On the operator norm of random matrices.* MSJ Spring Meeting 2021: Statistics and Probability - Keio University - Tokyo (online).

(30) **17 February 2021** *Generalized strong convergence iid random unitaries.* Functional Analysis Seminar - UCLA (online).

(31) **10 February 2021** *Matrix integrals in a tensor setup.* *NEW DATES* OIST Workshop "Quantum Math, Singularities and Applications" - Okinawa (online).

(32) **13 January 2021** *Weingarten calculus in a tensor setup.* TENSOR JOURNAL CLUB virtual - online.

(33) **3 December 2020** *Generalized strong asymptotic freeness.* Tokyo-Kyoto Joint Online Operator Algebra Seminars.

(34) **15 October 2020** *Regularized quantities for quantum channels involving free groups.* Entangling Noncommutative Functional Analysis and Geometry of Banach Spaces - CIRM - Marseille (online).

(35) **9 September 2020** *Tensor powers of linear maps and applications to quantum information.* Recent Developments in Operator Algebras - RIMS - Kyoto (online).

(36) **20 November 2019** *Strong asymptotic freeness for random tensors of unitaries.* Probability seminar - Princeton.

(37) **15 November 2019** *Strong asymptotic freeness for random tensors of unitaries.* Probability and Mathematical Physics Seminar - NYU.

(38) **31 October 2019** *Regularized minimum output entropy and generalized Haagerup inequalities.* - Colloquium - Kaohsiung.

(39) **30 October 2019** *Norm estimates for polynomials in random permutations.* - Probability seminar - Academia Sinica - Taipei.

(40) **22 October 2019** *Strong convergence for random permutations.* - Colloquium - Melbourne.

(41) **2–6 September 2019** *Strong convergence for random permutations and random tensors.* - Japanese-German Open Conference on Stochastic Analysis - Fukuoka.

(42) **22 August 2019** *Random Matrix Techniques in Quantum Information Theory.* - WPI 2019 - Hong Kong.

(43) **14 June 2019** *Infinite dimensional quantum channels and free probability.* - Workshop on Developments and Technical Aspects of Free Noncommutative Functions - Fields - Toronto.

(44) **2 June 2019** *Equivariance and application to entanglement detection.* - Interactions between Noncommutative Analysis and Quantum Information Theory - Harbin.

(45) **9 May 2019** *Strong Asymptotic Freeness for Random Permutations and Random Tensors.* - NYUS - Shanghai.

(46) **March 2019** *Strong convergence for random tensors.* Probability seminar - Berkeley.

(47) **15 February 2019** *Equivariance and application to entanglement detection.* - SITP - Stanford.

(48) **25 January 2019** *PPT and PPT2.* - 3rd Bangkok workshop on Discrete Geometry Dynamics and Statistics - Bangkok.

(49) **7 November 2018** *PPT and PPT2.* - Nagoya international workshop on the Physics and Mathematics of Discrete Geometries - Nagoya.

(50) **2 November 2018** *norm estimate for polynomials in unitary random tensors.* - OIST Mini Symposium "Holographic Tensors" - Okinawa.

(51) **summer 2018** *On Alon's generalized second eigenvalue conjecture.* - colloquium - uOttawa.

(52) **23 March 2018** *Strong convergence for random permutations.* - Hong Kong Probability Seminar - HKUST - Hong Kong.

(53) **16 January 2018** *calcul de Weingarten classique et quantique.* - colloque - Caen.

(54) **January 2018** *strong convergence for random permutations.* Functional analysis seminar - Paris 6.

(55) **December 2017** *strong convergence for random permutations.* Probability seminar - Orsay.

(56) **3 April 2017** *Asymptotics of $GL_N(\mathbb{C})$ tensor products and quantum random matrices.* - ProbabLY ON Random Matrices - ENS - Lyon.

(57) **20–24 February 2017** . - Asymptotic Representation Theory - IHP - Paris.

(58) **3 February 2017** *Highly entangled spaces through non random methods.* - Operator Algebras and Quantum Information Theory - RIMS - Kyoto.

(59) **21 November 2016** *Norm convergence for random unitary multimatrix models and Quantum Information Theory.* - GMS - Luxembourg.

(60) **19 November 2016** . - Saarebruecken.

(61) **16 November 2016** *Norm convergence for random unitary multimatrix models and Quantum Information Theory.* - Seminar in Applied Mathematics - HKUST - Hong Kong.

(62) **26 August 2016** *Operator norm convergence for the unitary Brownian motion.* - Random Product Matrices - Bielefeld.

(63) **12 August 2016** *Coefficients of the basis elements dual to the Temperley-Lieb basis and Weingarten calculus on O_n^+.* - Operator Algebras and Mathematical Physics - MSJ-SI - Sendai.

(64) **20 July 2016** *Free probability for quantum computation.* - Stochastic Methods in Quantum Mechanics - ANR - Autrans.

(65) **June 2016** . - Sapporo.

(66) **23 March 2016** *Free probability for random matrices with purely discrete eigenvalues.* - Free Probability and the Large N Limit, V - university of California - Berkeley.

(67) **24 March 2016** *Applications of the Haagerup's inequality and strong convergence of random matrices to quantum information theory.* - SITP - Stanford.

(68) **February 2016** . - Paris.

(69) **August 2015** . - Tokyo.

(70) **14 July 2015** *De Finetti theorems in quantum information theory, separable states, and (quantum) group symmetries.* - Quantum Groups and Quantum Information Theory - Herstmonceux (UK).

(71) **9 June 2015** *k-positive maps.* - MFO free probability - Oberwolfach.

(72) **10 March 2015** *Unitary Valued Brownian Motion.* - Queen's free probability seminar - Kingston.

(73) **9 January 2015** *Random positive maps.* - Random matrices and their applications - ROCORE - Hong Kong.

(74) **8 December 2014** *Weingarten calculus and applications.* - Winter School - Besancon / Metabief.

(75) **25 September 2014** *Random positive maps.* - Colloquium - Kolkata (India).

(76) **10 September 2014** *Random positive maps.* - Recent Developments in Operator Algebras - RIMS - Kyoto.

(77) **17 July 2014** *Random tensors and asymptotic freeness.* - ESI - Vienna.

(78) **29 April 2014** *MOE additivity violation via free probability theory.* - Colloquio sul - Florianopolis (Brazil).

(79) **22 April 2014** *Describing exchangeable SU(n) invariant separable states.* - Kyoto Operator algebra seminar - Kyoto.

(80) **15 February 2014** *Numerical range for random matrices.* - Queen's Free probability seminar - Kingston.

(81) **21 December 2013** *Numerical range for random matrices.* - Kansai Operator Algebras Seminar - Kinosaki.

(82) **6–9 December 2013** *Matrix Theory in Quantum Information.* - CMS Winter Meeting - Ottawa.

(83) **21 November 2013** *Violation of the MOE additivity via free probability.* - Operator Algebra seminar - Seoul National University.

(84) **13 November 2013** *Free probability and QIT.* - colloquium - Kyoto math department.

(85) **12 November 2013** *Free probability and QIT.* - colloquium - AIMR, Tohoku math dept.

(86) **3–10 November 2013** . - Discrete Mathematics & its Applications - JSP-DST seminar - Tokyo.

(87) **25 October 2013** *Quantum channels and free probability.* - JSP-DST seminar - Tokyo (Japan).

(88) **15 October 2013** *Operator norm convergence for sequence of matrices and application to QIT.* - Quantum Marginals - Newton Institute - Cambridge.

(89) **October 2013** . - Geometry Seminar - Tohoku.

(90) **4 September 2013** *Free compression norms and Lp norms.* - New mathematical directions for quantum information - Newton Institute - Cambridge.

(91) **22 May 2013** *Free compression norms and L_p norms.* - Intensive Month on Operator Algebra and Harmonic Analysis - Madrid.

(92) **10 May 2013** *Free probability and minimum output entropy in quantum information.* - Workshop on Operator Algebras - for the 80th birthday of Masamichi Takesaki - - Tokyo.

(93) **April 2013** . - operator algebra seminar - TAMU.

(94) **14 March 2013** *Norm convergence for random matrices and applications.* - Probability Seminar - Harvard.

(95) **February 2013** *Quantum information, free probability and random matrices.* - Colloquium - St John's.

(96) **31 January 2013** *Random matrices, free probability and quantum information theory.* - Quantum Information Theory talk - Perimeter Institute - Waterloo (Canada).

(97) **11 January 2013** *Norm convergence of unitary random matrix models and quantum information theory.* - AMS - San Diego.

(98) **15 November 2012** *Random matrices, free probability and quantum information.* - Geometry Seminar - Tohoku University - Sendai (Japan).

(99) **24 October 2012** *Mouvements browniens non commutatifs.* - Séminaire d'Analyse Harmonique Non Commutative - Université de Caen (France).

(100) **October 2012** . - probability seminar - Rennes (France).

(101) **17 September 2012** *Liberation of projections.* - Minisymposium on Free Probability and Random Matrices - DMV meeting, free probability session - Saarland University - Saarbrucken (Germany).

(102) **3 September 2012** *Free probability techniques in quantum information theory.* Workshop on Quantum Probabilistic Symmetries - Aberystwyth (UK).

(103) **September 2012** *Free probability and QIT.* - talk - inauguration du pole d'excellence - Lille (France).

(104) **July 2012** *Random matrices, free probability and quantum information theory.* - colloquium - RMT and statistics - Minneapolis (US).

(105) **June 2012** . - colloquium - Leipzig.

(106) **16 May 2012** *Non-Commutative Brownian Motion.* - Probabilistic Methods in Quantum Mechanics - University Claude Bernard Lyon 1 - Lyon (France).

(107) **21 April 2012** . - quantum information seminar - ETH Zurich.

(108) **10 April 2012** *Matrices aléatoires et information quantique.* - Séminaire de Probabilités-Statistiques - Laboratoire de Mathématiques de Versailles - Versailles.

(109) **21 March 2012** *Norm convergence for unitary random matrices.* - EPSRC Symposium Workshop - Interacting particle systems, growth models and random matrices - University of Warwick - Coventry (UK).

(110) **March 2012**. RMT and free probability theory - Berkeley.

(111) **March 2012***quantum symmetries.* quantum symmetries workshop - Aberystwyth (UK).

(112) **February 2012** *Random quantum channels*. Operator structures in quantum information theory - Banff International Research Station - Banff (Canada).
(113) **February 2012** . - seminaire de probabilites - Toulouse (France).
(114) **15 January 2012** . - CIRM - Marseille (France).
(115) **15 November 2011** . - Operator Algebra seminar - Cheongju (Korea).
(116) **November 2011** . - OA/FA meeting - Okinawa (Japan).
(117) **25–28 October 2011** *Applications of Random Matrix Theory to Quantum Information Theory*. - Operator Algebras and Mathematical Physics - Kansai seminar house - Kyoto.
(118) **12 October 2011** *New results in Free Probability theory and applications to Quantum Information theory*. - colloquium - RIMS - Kyoto.
(119) **21 April 2011** *Random matrices, representations of $GL(n)$ and free probability of higher order*. - Large N-limit of random multi-matrix systems, von Neumann algebras and free probability - ESI - Wien.
(120) **1 April 2011** . - RMT/stats conference - Minneapolis.
(121) **21 January 2011** *Computational Approach to Mathematical Problems - Riemann Hypothesis*. - JFFoS - Tokyo.
(122) **November 2010** *Random matrix theory and quantum information theory*. - Mittag-Leffler Institut - Stockholm.
(123) **24 November 2010** *Quantum Information Theory*. - seminar of Operator Algebras - Copenhagen.
(124) **21 October 2010** *Free probability and entropy additivity problems for Quantum information theory*. - operator algebra seminar - Tokyo.
(125) **27 September 2010** *Courses on quantum groups, free probability and non-commutative geometry*. - Groupes quantiques et géométrie non commutative - CIRM - Marseilles - France.
(126) **September 2010** . - Luminy.
(127) **16 September 2010** *Higher order freeness and asymptotic representations of unitary groups*. - Seminar on Asymptotic Representation Theory - Nagoya.
(128) **6 September 2010** *Higher order freeness and asymptotic representations of unitary groups*. - Stochastic Processes and Their Applications - SPA - Osaka.
(129) **September 2010** *Eigenvalues of vectors in a random subspace*. OA seminar - Tokyo.
(130) **September 2010** . - conference - Osaka.
(131) **31 August 2010** *Spectral properties of generators of $A_o(n)$*. - QUANTUM GROUPS - Clermont.
(132) **15 July 2010** *Random permutation matrices and sofic groups*. - Workshop on Groups and Group Actions in Operator Algebra Theory - Fields - Ottawa.
(133) **June 2010** . - Banff.
(134) **June 2010** . - journees de Cergy - Cergy.
(135) **1–4 June 2010** *Random Matrix Theory and Quantum Information Theory*. - Conference on Random Matrices - Paris 6.
(136) **8 March 2010** *Free Probability and Quantum Information Theory*. - C^*-Algebren - Mathematical Research Institute of Oberwolfach - Oberwolfach - Germany.
(137) **26 February 2010** . - operator algebra seminar - University of Waterloo.
(138) **4 February 2010** *Free Probability and Quantum Information Theory*. - Free Probability and Large N Limit, II - UCLA.
(139) **28 November 2009** *Free probability and quantum information theory*. - Cryptography and Quantum Information - McGill University - Montreal.
(140) **20 November 2009** *Free probability theory and quantum information theory*. - Colloquium - Queen's University.
(141) **28 October 2009** *Free probability theory and quantum information theory*. - Colloquium - Toronto University.
(142) **9 July 2009** *Random quantum channels: almost sure confinement of the eigenvalues*. - Workshop on Operator Structures in Quantum Information - Fields - Toronto.
(143) **30 June – 2 July 2009** *Modèles de matrices pour des groupes quantiques. Les Matrices Aléatoires de GranMa*. - ANR Granma meeting - Lyon.
(144) **11 June 2009** . - Luminy - Marseille.

(145) **6–10 June 2009** *Random quantum channels: almost sure confinement of the eigenvalues.* - Workshop on Operator Structures in Quantum Information - Fields - Toronto.

(146) **5 June 2009** *Random matrix models arising from quantum information theory and applications.* - 41 Symposium on Mathematical Physics - Nicolaus Copernicus University - Torún.

(147) **3 June 2009** . operator algebra seminar, Wroclaw (P. Sniady, M. Bozejko).

(148) **26–30 May 2009** *Some geometric and probabilistic properties of the free quantum groups.* - Canadian Operator Symposium - Regina.

(149) **15 May 2009** *Connes embedding property for $A_o(n)$ and $A_s(n)$.* - Quantum Group Workshop - Toulouse (co-organizer, ANR meeting galoisint).

(150) **6 May 2009** *Matrix approximation in non-commutative probability, representation theory and Schubert calculus.* - analysis seminar - Wroclaw (P. Sniady, M. Bozejko).

(151) **5–6 March 2009** . - asymptotic analysis seminar - Nagoya.

(152) **10 February 2009** . - Kyushu (Y. Ueda).

(153) **2 February 2009** *quantum information and graphical calculus.* - quantum information seminar - Sendai (F. Hiai).

(154) **24 January 2009** . - Kyoto operator algebra seminar - Kyoto.

(155) **17 December 2008** *Some geometric and probabilistic properties of the free quantum group $A_o(n)$.* - Operator Algebras Seminar - Tokyo.

(156) **4 December 2008** . TAMU.

(157) **13 November 2008** . - operator algebra seminar - Goettingen (A. Thom).

(158) **10 November 2008** *Free Bessel laws and new examples of liberated quantum groups.* - Workshop Operator Algebraic Aspects of Quantum Groups - ERC meeting - Leuven (S. Vaes).

(159) **24 October 2008** *On the spectral measure of the sum of elements in a finite von Neumann algebra.* - Tokyo university colloquium.

(160) **25–27 September 2008** *Quantum groups and quantum probability.* - Saskatoon colloquium (S. Belinschi).

(161) **23 September 2008** *Convergence of unitary matrix integrals.* - Stochastics and Statistics Seminar - MIT.

(162) **14–16 September 2008** *Convergence of Unitary and Orthogonal Matrix integrals.* - Erlangen DMV meeting (M. Stolz).

(163) **1–5 June 2008** *On the spectral measure of the sum of elements in a finite von Neumann algebra.* - Non-Commutative Geometry and K-Theory for Operator Algebras - 2nd France-Canada - Montreal (G. Elliott).

(164) **20–24 May 2008** . - Canadian Operator Symposium - Fields workshop - University of Toronto (M. Neufang).

(165) **12–16 May 2008** . - Topological Methods in Algebra, Analysis and Dynamical Systems - Fields workshop - Nipissing (Murat Tuncali).

(166) **May 2008** - CMS meeting - OA - Fields institute - Toronto - (A. Toms).

(167) **5 April 2008** *Some probabilistic and topological properties of the free quantum orthogonal group $A_o(n)$.* - AMS meeting - Bloomington.

(168) **February 2008** . - probability seminar - Toulouse (T. Banica F Barthe).

(169) **14 February 2008** *Weingarten calculus and combinatorics of free probability.* - Journées Groupes Quantiques - ANR workshop - Strasbourg (C. Kassel).

(170) **14 January 2008** *Free Bessel laws.* - Free Probability, Extensions, and Applications - Banff (R. Speicher).

(171) **December 2007** . - Kansai OA seminar - Kyoto.

(172) **December 2007** . - series of lectures - Nagoya (Akihito Hora).

(173) **18 September 2007** *Weingarten calculus on enveloping algebras and non-commutative random matrices.* - Workshop on Free Probability, Random Matrices, and Planar Algebras - Fields - Toronto - Operator algebra semester. Video.

(174) **September 2007** . - Quantum Probability and Related Topics - CIMAT - Guanajuato.

(175) **13–24 August 2007** . - Summer School in Operator Algebras - Fields - Ottawa (I co-organized it).

(176) **10–17 July 2007** *A linearization theorem for non-commutative probability spaces and applications to Connes embeddability conjecture.* - concentration week in Free Probability - College Station TAMU.

(177) **25–29 June 2007** *Some probabilistic aspects of quantum groups*. - Meeting on noncommutative Lp spaces - CIRM.

(178) **14 June 2007** *A linearization theorem for non-commutative probability spaces and applications to Connes embeddability conjecture*. - Free Probabilities, Operator Spaces and von Neumann Algebras - Sibiu.

(179) **4 May 2007** *A linearization theorem for non-commutative probability spaces and applications to the Connes*. Interactions between Probability and Functional Analysis - Fields - Carleton University - Ottawa.

(180) **28 March 2007** *Convergence of unitary matrix integrals*. - Free Probability and Large N Limit - UC Berkeley.

(181) **February 2007** . - College Station.

(182) **January 2007** . - Ottawa.

(183) **December 2006** . - Tokyo.

(184) **11 December 2006** *Convergence of unitary matrix integrals*. - Probabilistic Methods in Analysis and Algebra - CMS Winter Meeting - Toronto.

(185) **November 2006** . - Goettingen.

(186) **2 November 2006** *Convergence of unitary matrix integrals*. - Random Matrices - CIRM Luminy (Arno Kuijlaars and Michel Ledoux).

(187) **29 September – 5 October 2006** *Convergence of unitary matrix integrals*. - 9th Workshop: Noncommutative Harmonic Analysis with Applications to Probability - Będlewo.

(188) **September 2006** . - Cork.

(189) **June 2006** . - Wroclaw.

(190) **22 May 2006** *Connes property for quantum groups*. Quantum groups meeting - Toulouse.

(191) **26 April 2006** *Quelques résultats récents sur l'intégrale de Itzykson-Zuber et ses scalings*. - Conférence en probabilité - EPFL - Lausanne.

(192) **April 2006** . - Bochum.

(193) **February 2006** . - Queens.

(194) **February 2006** . - Texas A&M University.

(195) **February 2006** . - University of Illinois at Urbana Champaign.

(196) **February 2006** . - Besancon.

(197) **December 2006** . - Osaka.

(198) **December 2006** . - Kyushu.

(199) **September 2006** . - Sendai.

(200) **June 2006** . - Cork.

(201) **June 2006** . - Besancon.

(202) **May 2006** . - Wroclaw.

(203) **April 2006** . - Toulouse.

(204) **28 November 2005** *Representation of unitary groups, random matrix theory and free probability* - Seminar, Kyushu.

(205) **November 2005** . - Seoul (Yonsei).

(206) **6–10 june 2005** *Itzykson-Zuber integral and Voiculescu's R-transform*. - Workshop on Operator algebras, Operator spaces and Noncommutative Probability - Paris 6.

(207) **27 March – 2 April 2005** *Free probability*. - MFO Oberwolfach (P. Biane, R. Speicher, D. Voiculescu).

(208) **15 March 2005** . - Ottawa university Colloquium.

(209) **15 February 2005** . - Case Western reserve - Colloquium.

(210) **8 February 2005** *Higher order freeness*. - AQ seminar - Sendai (N. Obata, F. Hiai).

(211) **10–14 January 2005** *Braid Groups, Clusters and Free Probability*. - Palo Alto, AIM.

(212) **9–14 October 2004** *Free probability and Jacobi ensembles*. - Free probability - Banff (Nica, Speicher, Voiculescu) - ppower4.

(213) **10 September 2004** *Development of the limit of the IZ integral close to zero*. - Sendai (F. Hiai).

(214) **27 August 2004** *An introduction to map enumeration via matrix integrals*. - Junior (Ueda).

(215) **2–6 August 2004** . - Free probability workshop (Dykema, Pisier).

(216) **18-21 May 2004** *Integration over classical compact groups with applications to free probability and matrix integrals*. - Warwick, UK O'Connell - ppower4.

(217) **12 May 2004** *Integration over classical compact groups with applications to free probability and matrix integrals*. - Kyoto operator algebra seminar.
(218) **5 March 2004** . - Seminar of operator algebra, Tokyo university (Y. Kawahigashi).
(219) **16 February 2004** . - Aoba Seminar (N. Obata).
(220) **19 December 2003** *Unitary integration, matrix integrals and free probability*. - Seminar of operator algebra, Tohoku university (F. Hiai).
(221) **17 December 2003** *Free probability and classical modified matrix ensembles*. .
(222) **17 November 2003** *Free probability and Jacobi ensembles*. - Workshop operator algebra/functional analysis - Nagoya (T. Natsume).
(223) **13 November 2003** *Free probability and matrix integrals*. - Seminar of operator algebra, Tokyo university (Y. Kawahigashi).
(224) **27 October 2003** *Quantum Martin boundary*. - Seminar of operator algebra, Kyushuu university (Y. Ueda, T. Hayashi).
(225) **27 October 2003** *Free probability and universality results for modified Jacobi ensembles*. - Seminar of analysis, Kingston university (R. Speicher).
(226) **14 October 2003** *Integration on compact groups and free probability*. - Seminar of mathematics, Waterloo university (A. Nica).
(227) **19 September 2003** *Random matrices and free probability*. - Kyoto university, seminar of probability (Yoshida).
(228) **9 September 2003** *Free probability and Jacobi ensembles*. - Journees de probabilites (M. Ledoux et al), invited conference.
(229) **9 July 2003** *Projecteurs aleatoires, ensembles de Jacobi, probabilites libres*. - workshop GdR algebres d'operateurs (S. Vassout, E. Germain).
(230) **25 June 2003** *Free probability and Itzykson-Zuber integral*. - Kyoto, Kansai operator algebra seminar (M. Izumi).
(231) **28 May 2003** *Quantum Martin Boundary*. - Kyoto, operator algebra seminar (M. Izumi).
(232) **30 April 2003** *Modified Jacobi ensembles and free probability theory*. - Katholieke universiteit leuven (A. Kuijlaars).
(233) **22 January 2003** *Itzykson-Zuber type integrals and free probability*. - Workshop IHP random growth (J-B Zuber, G. Schaeffer, W. Werner).
(234) **9 January 2003** *Itzykson-Zuber type integrals and free probability*. - Workshop random matrices - Sandbjerg Manor, Denmark (U. Haagerup, S. Thorbjornsen).
(235) **6 December 2002** *Matrices aleatoires et probabilites libres*. - Seminaire de probabilites de Toulouse.
(236) **5 December 2002** *Integration sur le groupe unitaire*. - Seminaire de probabilites de Toulouse.
(237) **10 August 2002** *A combinatorial approach to the IZ integral and free probability*. - PIMS Vancouver (Pisier, Szarek).
(238) **30 April 2002** *Convergence d'integrales de type Itzykson-Zuber*. - Aussois colloque jeunes probabilistes.
(239) **4 March 2002** *rencontre groupement de recherche algebre d'operateurs*. - CIRM.
(240) **20 March 2001** *une approche combinatoire de l'integrale de IZ, II*. - GdT Paris 6 (Pisier).
(241) **13 March 2001** *une approche combinatoire de l'integrale de IZ, I*. - GdT Paris 6 (Pisier).
(242) **25 August 2000** *Quantum Martin boundary*. - workshop Wroclaw (Bozejko).
(243) **15 June 2000** *Quantum Martin boundary*. - GdT Paris 6 (Pisier).

Mini-courses

November 2023 Intensive course on Weingarten calculas (English, Nagoya University)
October 2022 Intensive course on Random Matrices (Japanese, Kyushu University)
June 2022 Around the operator norm convergence of random matrices in free probability, RMMC summer school lecture series (English, Laramie)
June 2022 Equivariance and positivity, summer school lecture series (English, Bangalore)
November 2017 Quantum Information theory, intensive course (English, Tokyo)
November 2017 Random Matrix Techniques in Quantum Information theory, intensive course (English, IHP)

21-28 April 2017 Free Probability and Applications (CIMPA intensive course, French, Settat, Morocco)
June 2016 Random Matrix Theory (intensive course, Japanese, Sapporo)
Fall 2011 intensive course on random matrix theory (Kyoto University)
Spring 2009 invited series of lectures, Wroclaw.
Fall 2008 combinatorics of free probability (Tokyo university, graduate course, English)
Spring 2008 matrix integrals (mini-course at Nipissing university)
Fall 2007 Weingarten calculus (research course at Nagoya university)

Teaching

Fall 2022 Linear Algebra B (English, Kyoto)
Fall 2022 Topics Analysis II - Random Matrix Theory (Japanese, Kyoto)
Spring 2022 Honors Mathematics B (English, Kyoto)
Spring 2022 Linear Algebra A (English, Kyoto)
Fall 2021 Linear Algebra B (English, Kyoto)
Spring 2021 Honors Mathematics B-E2 (English, Kyoto)
Spring 2021 Linear Algebra with Exercises A (English, Kyoto)
Spring 2020 Topics in Analysis F (Japanese, Kyoto)
Spring 2020 Honors Mathematics B-E2 (English, Kyoto)
Spring 2020 Linear Algebra with Exercises A (English, Kyoto)
Fall 2019 Honors Mathematics A (English, Kyoto)
Fall 2019 Linear Algebra B (English, Kyoto)
Spring 2019 Linear Algebra A (English, Kyoto)
Fall 2018 Honors Mathematics A (English, Kyoto)
Fall 2018 Linear Algebra B (English, Kyoto)
Spring 2018 Honors Mathematics B (English, Kyoto)
Spring 2018 Linear Algebra A (English, Kyoto)
November 2017 Quantum Information theory, intensive course (English, Tokyo)
Spring 2017 Honors Mathematics B (English, Kyoto)
Spring 2017 Linear Algebra A (English, Kyoto)
Fall 2016 Honors Mathematics A (English, Kyoto)
Fall 2016 Topics Analysis II - Random Matrix Theory (Japanese/English, Kyoto)
June 2016 Random Matrix Theory (intensive course, Japanese, Sapporo)
Spring 2016 Linear Algebra A (English, Kyoto)
Fall 2015 Honors Mathematics A (English, Kyoto)
Fall 2015 Linear Algebra B (English, Kyoto)
Spring 2015 Linear Algebra A (English, Kyoto)
Fall 2014 Honors Mathematics A (English, Kyoto)
Winter 2014 Analyse complexe (French, Ottawa, MAT3521)
Winter 2014 Introduction à l'analyse (French, Ottawa, MAT1725)
Winter 2013 Introduction à l'analyse (French, Ottawa, MAT1725)
Fall 2011 Intensive course on random matrix theory (Kyoto University)
Winter 2011 Analyse II (French, Ottawa, MAT2521)
Spring 2010 Calcul différentiel et intégral II (French, Ottawa, MAT1722)
Spring 2010 Analysis II (English, Ottawa, MAT2121)
Fall 2009 Introduction a l'algèbre linéaire appliquée (French, Ottawa, MAT2742)
Fall 2009 Real Analysis I (English, Ottawa, MAT4125/5125)
Fall 2008 Combinatorics of free probability (Tokyo university, graduate course, English)
Winter 2008 Introduction à l'algèbre linéaire (French, Ottawa MAT1741)
Fall 2007 Measure theory (English, Ottawa MAT5125)
Fall 2007 Linear algebra (English, Ottawa MAT2141)
Winter 2007 Analyse complexe (French, Ottawa MAT3521)

2002-2003 Quantum calculus (ENS students seminar)
2001-2002 Towers of algebras (ENS students seminar)
2001-2003 Preparation of "agrégation de mathematiques" oral examination (ENS Paris)
2000-2001 Analyse complexe (TA, ENS Paris)
1996-1999 Interrogation sessions in "Classes préparatoires" at Lycees Louis-le-Grand and Saint-Louis
1996-2003 private tutoring in mathematics

Research and Graduate supervision

PhD students:

PhD, Kyoto: Mr. Akihiro Miyagawa (2021/04 – 2024/03)
PhD, Kyoto: Mr. Junichiro Matsuda (2021/04 – 2024/03)
PhD, Kyoto: Mr. Mathieu Fevre (2018/04 – 2021/03) [unfinished – placement: high school teaching]
PhD, Kyoto: Mr. Felix Parraud (2018/10 – now) [joint supervision with Alice Guionnet at ENS Lyon]
PhD, Kyoto: Ms. Gunjan Sapra (2015/10 - 2019/03) [placement: postdoctoral fellow at ISI Bangalore]
PhD, Kyoto: Ms. Sushma Kumari (2015/10 - 2018/09) [placement: assistant professor at Musashino University]
PhD, uOttawa: Mr. Chadi Hamzo (2012/09 - 2018/05) [placement: consulting, Toronto area]
PhD, uOttawa: Mr. Timothy Cioppa (2012/01 - 2017/01) [unfinished – placement: developper Toronto Area]
PhD, uOttawa: Ms. Muneerah Al Nuwairan (2009/09 - 2015/01) [placement: assistant professor KSA]
PhD, uOttawa: Ms. Nadia Saad (2008/01 - 2012/12) [placement: assistant professor Cairo]
PhD, uOttawa: Ms. Termeh Kousha (2007/09 - 2011/12) [placement: teaching professor uOttawa]

MSc students:

MSc, Kyoto: Ms. Manasa Nagatsu (2024/04 – now)
MSc, Kyoto: Mr. Nao Tomita (2022/04 – now)
MSc, Kyoto: Mr. Kento Satou (2022/04 – now)
MSc, Kyoto: Mr. Kohki Iba (2022/04 – 2022/09)
Graduate Internship: Ms. Lamia Lamrani (2019/06 – 2019/08)
MSc, Kyoto: Mr. Akihiro Miyagawa (2019/04 – 2021/03) [placement: PhD student Kyoto U]
MSc, Kyoto: Mr. Junichiro Matsuda (2019/04 – 2021/03) [placement: PhD student Kyoto U]
M2 (foreign student), Kyoto: Mr. Mathieu Fevre (2016/08 – 2017/07) [placement: PhD student Kyoto U]
MSc, Kyoto: Mr. Yuki Ueda (2015/04 – 2017/03) [placement: PhD student Hokkaido]
MSc, Kyoto: Mr. Katsushi Fujiwara (2015/04 – 2017/03) [placement: high school teacher Kansai]
MSc: Mr. Samuel Buteau (2014/09 – 2016/08) [placement: PhD student Dalhousie]
MSc: Mr. Pierre Yves Gaudreau Lamarre (2013/09 – 2015/08) [placement: PhD student Princeton]
MSc, uOttawa: Mr. Timothy Cioppa (2010/01 – 2011/12) [placement: PhD student uOttawa]

Undergraduate studies/internships: [all students mentioned below who terminated studies under my supervision moved to graduate studies subsequently]

4th-seminar, Kyoto: Mr. Akihiro Miyagawa (2018/04 – 2019/03)
4th-seminar, Kyoto: Mr. Junichiro Matsuda (2018/04 – 2019/03)
4th-seminar, Kyoto: Mr. Ryuta Namise (2018/04 – 2019/03)
4th-seminar, Kyoto: Mr. Kazuto Zenno (2018/04 – 2019/03)
Undergraduate Internship: Mr. Alexander McDonald (2015/01 – 2015/03)
Undergraduate Internship: Mr. Alexander McDonald (2013/06 – 2013/08)
Undergraduate Internship: Mr. Pierre Yves Gaudreau Lamarre (2013/04 – 2013/06)
Undergraduate Internship: Mr. Samuel Buteau (2013/04 – 2013/06)
USRA Internship: Mr. Samuel Buteau (2013/01 – 2013/04)
USRA Internship: Mr. Pierre Yves Gaudreau Lamarre (2011/05 – 2011/06)
Mitacs Globalink fellowship: Mr. Gaurav Sinha (2010/05 - 2010/07)

NSERC USRA: Mr. Timothy Cioppa (2008/04 – 2008/07)
Internship, Lyon 1: Mr. Julien Poisat (2006/04 – 2006/06)

Postdoctoral fellowships (note: placement stated whenever known):

Postdoctoral fellow: Dr. Saeid Molladavoudi (2017/03 – 2018/06) [placement: analyst Statistics Canada]
Postdoctoral fellow: Dr. Charles Starling (2015/03 – 2016/06) [placement: assistant professor Carleton, Canada]
Postdoctoral fellow: Dr. Carlos Gonzales-Guillen (2015/01 – 2015/06) [placement: assistant, UCM Madrid, Spain]
FO postdoc uOttawa / Carleton: Dr. Sutanu Roy (2014/01 – 2016/04) [placement: assistant professor NISER, India]
Postdoctoral fellow, uOttawa: Dr. Robin Langer (2014/01 – 2014/06)
Postdoctoral fellow, uOttawa: Dr. Camille Male (2013/09 – 2014/06) [placement: CNRS researcher, France]
Postdoctoral fellow, uOttawa: Dr. Steve Avsec (2013/01 – 2013/08) [placement: law firm, US]
Postdoctoral fellow, uOttawa: Dr. Nadia Saad (2013/01 – 2013/06) [placement: assistant professor Cairo, Egypt]
Postdoctoral fellow, uOttawa: Dr. Adam Sierakowski (2012/01 – 2012/06) [placement: research fellow Wollongong, Australia]
Postdoctoral fellow, uOttawa: Dr. Termeh Kousha (2012/01 – 2012/06) [placement: teaching professor uOttawa]
FO Postdoctoral fellows: Dr. Deping Ye (2010/07 – 2011/07) [placement: associate professor Memorial University, Canada]
Postdoctoral fellow, uOttawa: Dr. Ion Nechita (2009/07 – 2011/08) [placement: CNRS researcher, France]
Postdoctoral fellow, uOttawa: Dr. Richard Burstein (2008/09 – 2009/08)

Leadership

Organization of long term programs:
2021: co-organizing a RIMS one year Program with N. Ozawa, M. Izumi, Y. Kawahigashi, Y. Ueda
2019: co-organization of a one month CRM program (Montreal) on Free probability (March 2019, with James Mingo, Roland Speicher and Dan Voiculescu)
2017: co-organization of an IHP trimester (Paris) on the Mathematics of Quantum Information Theory (Fall 2019, with Guillaume Aubrun, Ion Nechita and Staszek Szarek)
2013: co-organization a Fields thematic program (July 2013, with S. Belinschi, J. Mingo, A. Nica, R. Speicher, D. Voiculescu)

Conference organization:
2024 co-organization of a program at IHP
2024 co-organization of a conference at IHES (March 2024)
2023 co-organization of a conference on Free Probability at the Fields Institute
2023 co-organization of a conference on Random Matrix Theory in at RIMS
2022 co-organization of a conference on Random Matrix Theory in Shenzhen
2022 co-organization of a workshop on Non-Commutative probability at RIMS
2020 co-organization of the 75th CMS meeting in Ottawa (June 2020, main organizer Monica Nevins)
2020 advisory committee of the 4th Bangkok Workshop on Discrete Geometry, Dynamics and Statistics (January 2020, main organizer Oleg Evnin)
2019 co-organization of a French-Japan meeting on probability and non-commutative probability in Kyoto (August 2019, with Nizar Demni, Kouji Yano, Takahiro Hasebe, Noriyoshi Sakuma)
2019 co-organization MAQIT, Seoul National University (with Hun Hee Lee and Seung Hyeok Kye)
2018 main organizer of Random Matrix Theory in Kyoto (May 2019, with Djalil Chafai, Jamal Najim, Hirofumi Osada, Tomoyuki Shirai)
2016 co-organization MAQIT, Daejon (with Hun Hee Lee and Seung Hyeok Kye)

2016: co-organization of a conference (uOttawa, 30 May - 1 June 2016, with T. Giordano, V. Pestov)

2015: co-organiziation of a workshop on Quantum Information(Cork, with M. Christandl, K. Kostler)

2015: co-organization of a Fields workshop (Herstmonceux, 13-17 July 2015, with J. Mingo, A. Montanaro, G. Viola, M. Weber)

2015: co-organization of a Fields workshop (uOttawa, 5-7 February 2015, with T. Giordano, S. Roy)

2013: co-organization of a CMS winter meeting session (Ottawa, 6-9 December 2013, with M. Kalantar, M. Kennedy, T. Giordano)

2012: co-organization of a CMS summer meeting session (Regina, 1-4 June 2012, with S. Belinschi)

2010: co-organization of a Fields extended workshop on Groups and Group Actions in Operator Algebra Theory (uOttawa, 12-16 July 2010, with T. Giordano, V. Pestov)

2010: co-organization of a Fields-Perimeter workshop on Random Matrix Techniques in Quantum Information Theory (4 - 6 July, 2010)

2009: co-organization of an ANR quantum group meeting (Toulouse, 14-16 May 2009, with T. Banica and J. Bichon)

2008: co-organizing the CMS Winter meeting Operator Algebra session (Ottawa, 5-8 December 2008, with T. Giordano)

2008: main organizer of a Fields workshop around Connes Embedding Problem (Ottawa, 16-18 May 2008)

2007: co-organizing the Fields operator algebra summer school (uOttawa, 13-24 August 2007, with T. Giordano, D. Handelman, V. Pestov)

Seminar organization:

Catch-all Mathematical Colloquium of Japan, organizer (Fall 2021 – March 2024);

Kyoto University Mathematics Colloquium, organizer (Spring 2019);

Kyoto Operator Algebra seminar, organizer (2014-present);

uOttawa analysis seminar (2007-2014);

Committee Membership (departmental committees omitted):

2013/3 – 2014/4: Head of the selection panel for all NSERC grant applications in mathematics in Canada (evaluation group 1508, NSERC Discovery Grant)

2012/2–2012/6: External Committee Member, Associate professor hiring committee, Université de Franche-Comté

2011/1 - 2013/3: Committee Member, NSERC Discovery Grant, Natural Sciences and Engineering Research Council of Canada

2010/10 – 2012/7 Romanian Innovation Council Committee Member

2010–2011: Committee Member, Bourses de recherche postdoctorale, Fonds de recherche du Québec - Nature et technologies (FRQNT), Canada

Journal Refereeing (alphabetical order, multiplicity omitted):

(1) Advances in Mathematics
(2) ALEA
(3) Annales de l'Institut Henri Poincaré B
(4) Annales de l'Institut Henri Poincaré D
(5) Annales Scientifiques de l'Ecole Normale Supérieure
(6) Annals of Applied Probability
(7) Annals of Probability
(8) Annals of Statistics
(9) Astérisque
(10) Bedlewo proceedings
(11) Bernoulli
(12) Bulletin des Sciences Math.
(13) Bulletin of the LMS
(14) Communications in Mathematical Physics
(15) Conference on Formal Power Series and Algebraic Combinatorics

(16) Crelle's journal
(17) Discrete Mathematics
(18) Documenta Mathematica
(19) Duke Mathematical Journal
(20) Electronic Communications in Probability
(21) Electronic Journal of Combinatorics
(22) Electronic Journal of Probability
(23) Entropy
(24) GAFA
(25) Geometry & Topology
(26) IEEE Transactions on Automatic Control
(27) Indiana University Mathematics Journal
(28) International Journal of Mathematics
(29) Inventiones Mathematicae
(30) Journal of the American Mathematical Society
(31) Journal of Combinatorial Theory A
(32) Journal of Functional Analysis
(33) Journal of Mathematical Physics
(34) Journal of Multivariate Analysis
(35) Journal of Operator Theory
(36) Journal of Physics A
(37) Journal of Probability and Statistics
(38) Journal of Statistical Physics
(39) Journal of the European Mathematical Society
(40) Journal of the London Mathematical Society
(41) Journal of Theoretical Probability
(42) Kyoto Journal of Mathematics
(43) Letters in Mathematical Physics
(44) London Mathematical Society
(45) Mathematische Annalen
(46) Nagoya journal of mathematics
(47) Pacific Journal of Mathematics
(48) Physical Review E
(49) Physics Letters A
(50) PNAS
(51) Positivity
(52) PRL
(53) Probability and Mathematical Physics
(54) Probability Theory and Related Fields
(55) Publications of the Research Institute of Mathematical Science
(56) Random Matrices: Theory and Applications
(57) SIGMA
(58) Transactions of the AMS
(59) Transactions on mathematical software

Book Refereeing:
Oxford University Press
Springer Briefs
Springer Theoretical and Mathematical Physics

Grant Refereeing (note: most items are counted without multiplicity)
ARIS Slovenia
ISF (Israel Science Foundation)
SNF (Swiss national science foundation)

Research Foundation Flanders (FWO)
MAESTRO and SONATA grant scheme of the Polish National Science Centre
European Research Council starting, consolidator and advanced grants (referee)
Agence de la Recherche, France (referee)
NSERC discovery grants and Canadian Research chairs
BIRS workshop proposals
Fields semester proposals
BIRS proposals
MFO proposals
Mittag-Leffler Proposals

PhD theses:
I was examiner and committee member of the following PhD defences:
Analyse et probabilité sur les groupes quantiques (localement) compacts et les groupes duaux, Isabelle Baraquin under Uwe Franz at Université Franche Comté, June 2019;
Homological Manifestation of Quantum Group duality, Jason Crann under Matthias Neufang at Carleton University, August 2015
Schur-Weyl Duality, Brownian motion on classical compact Lie groups and asymptotic study of Yang-Mills measure, Antoine Dahlqvist under Thierry Lévy at LPMA, Paris 6, Fall 2013;
Actions of Finite Groups on Substitution Tilings and Their Associated C*-algebras, Charles Starling under Thierry Giordano at University of Ottawa, Fall 2011;
Real Second-Order Freeness and Fluctuations of Random Matrices, Emily Redelmeier under Jamie Mingo at Queen's University (Canada), August 2011;
Representation theory of compact inverse semigroups, Wadii Hajji under Benjamin Steinberg and David Handelman at University of Ottawa, July 2011;
Towards Harmonic Analysis on Locally Compact Quantum Groups From Groups to Quantum Groups – and Back, Mehrdad Kalantar under Matthias Neufang at Carleton University, fall 2010
Gelfand-Cetlin patterns, Tony Metcalfe under Neil O'Connell at UCC Cork, July 2009;
Etats aléatoires, théorie quantique de l'information et probabilités libres, Ion Nechita under Stéphane Attal at Université Lyon 1, March 2009;
Actions of xerox type on Araki-Woods factors and their fixed point von Neumann algebras, Radu Munteanu under Thierry Giordano at University of Ottawa, February 2009;

Habilitation theses I was external / committee for the following habilitation diplomas (note: habilitation is a French diploma, typically 5-10 years after PhD, needed for established researchers to become PhD supervisors):
Approche Probabiliste des Trajectoires Quantiques, Clément Pellegrini Université Paul Sabatier, 7/12/2018;
Géométrie de l'intrication quantique, Guillaume Aubrun Université Lyon 1, 27/3/2017;

Language skills

I have held academic positions, worked, taught and done administration in French, English and Japanese. Here is a more specific description of my language abilities:

    French: Native language
    English: Bilingual working proficiency (read, written, spoken)
    Japanese: Working proficiency (read, spoken)
    German: Fluent (read, written, spoken)