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Research interests

Random matrix theory: study of random unitary matrices (in particular the Circular Unitary Ensemble), random permutation matrices and related infinite-dimensional limiting objects, link between random matrix theory and number theory, link between random matrix theory and mathematical physics.

Stochastic analysis: study of limiting measures constructed by modifying the Brownian motion or more general stochastic processes, study of the Brownian local times and polymer models.

Research outputs

On moments of Brownian functionals and their interpretation in terms of random walks

Najnudel, J., Wu, C. T. & Yen, J. Y., 1 Jun 2020, In : Statistics and Probability Letters. 161, 108724.

On consecutive values of random completely multiplicative functions

Najnudel, J., 12 Apr 2020, (Accepted/In press) In : Electronic Journal of Probability. 25, 59

A discussion on some simple epidemiological models

Najnudel, J. & Yen, J-Y., 2020, In : Chaos Solitons & Fractals. 140

Convergence of eigenvectors of minors of unitarily invariant infinite random matrices

Najnudel, J., 2020, In : International Mathematics Research Notices.

Exponential moments of the argument of the Riemann zeta function on the critical line

Najnudel, J., 2020, In : Mathematika.

Feller coupling of cycles and Poisson spacings

Najnudel, J. & Pitman, J., 2020, In : Electronic Communications in Probability. 25, 73

Secular Coefficients and the Holomorphic Multiplicative Chaos

Najnudel, J., Paquette, E. & Simm, N., 2020, (Submitted) In : arXiv.

The boundary of the orbital beta process

Assiotis, T. & Najnudel, J., 2020, (Accepted/In press) In : Moscow Mathematical Journal.

The Loss Surfaces of Neural Networks with General Activation Functions

Baskerville, N. P., Keating, J., Mezzadri, F. & Najnudel, J., 2020, (Submitted) In : arXiv.

Uniform point variance bounds in classical beta ensembles

Najnudel, J. & Virág, B., 2020, (Accepted/In press) In : Random Matrices: Theory and Applications .

Strong convergence of eigenangles and eigenvectors for the Circular Unitary Ensemble

Maples, K., Najnudel, J. & Nikeghbali, A., 1 Jul 2019, In : Annals of Probability. 47, 4, p. 2417-2458 42 p.

A limiting characteristic polynomial of some random matrix ensembles

Chhaibi, R., Hovhannisyanyan, E., Najnudel, J., Nikeghbali, A. & Rodgers, B., 31 Jan 2019, In : Annales de l'Institut Henri Poincaré (B) Probabilités et Statistiques. 20, 4, p. 1093-1119 26 p.

On equalities of sigma-finite measures constructed from discrete recurrent Markov chains

Najnudel, J. & Yen, J-Y., 2019, In : ALEA: Latin American Journal of Probability and Mathematical Statistics. 16

On smooth mesoscopic linear statistics of the eigenvalues of random permutation matrices

Najnudel, J. & Bahier, V., 2019, (Submitted) In : arXiv.

On the circle, $\mathbb{G}MC^\gamma = C\beta E_\infty$ for $\gamma = \sqrt{\frac{2}{\beta}}$, ($\gamma \leq 1$)

Chhaibi, R. & Najnudel, J., 2019, (Submitted) In : arXiv.

The bead process for beta ensembles

Najnudel, J. & Virág, B., 2019, (Submitted) In : arXiv.

On the extreme values of the Riemann zeta function on random intervals of the critical line

Najnudel, J., 1 Oct 2018, In : Probability Theory and Related Fields. 172, p. 387-452

On the maximum of the $C\beta E$ field

Chhaibi, R., Madaule, T. & Najnudel, J., 10 Aug 2018, In : Duke Mathematical Journal. 167, 12, p. 2243-2345 103 p.

Rigidity of the Sine_β process

Chhaibi, R. & Najnudel, J., 2018, In : Electronic Communications in Probability. 23, 94

The Circular Unitary Ensemble and the Riemann zeta function: the microscopic landscape and a new approach to ratios

Chhaibi, R., Najnudel, J. & Nikeghbali, A., 3 Jun 2016, In : Inventiones Mathematicae. 207, 1, p. 23-113 91 p.

Limit theorems for orthogonal polynomials related to circular ensembles

Najnudel, J., Nikeghbali, A. & Rouault, A., 2016, In : Journal of Theoretical Probability. 29, 4

A characterization of limiting functions arising in mod-* convergence

Kowalski, E., Najnudel, J. & Nikeghbali, A., 2015, In : Electronic Communications in Probability. 20, 79

On sigma-finite measures related to the Martin boundary of recurrent Markov chains

Najnudel, J., 2015, *Séminaire de Probabilités, Volume XLVII, in memoriam Marc Yor.*

On the number of zeros of linear combinations of independent characteristic polynomials of random unitary matrices

Barhoumi-Andréani, Y., Hughes, C., Najnudel, J. & Nikeghbali, A., 2015, In : International Mathematics Research Notices. 2015

On a flow of operators associated to virtual permutations

Najnudel, J. & Nikeghbali, A., 2014, *Séminaire de probabilités, Volume XLVI.*

A unitary extension of virtual permutations

Bourgade, P., Najnudel, J. & Nikeghbali, A., 2013, In : International Mathematics Research Notices. 2013, 18

On penalisation results related with a remarkable class of submartingales

Najnudel, J. & Nikeghbali, A., 2013, In : Markov Processes and Related Fields. 19, 4

Random permutation matrices under the generalized Ewens measure

Hughes, C., Najnudel, J., Nikeghbali, A. & Zeindler, D., 2013, In : Annals of Applied Probability. 23, 3

The distribution of eigenvalues of randomized permutation matrices

Najnudel, J. & Nikeghbali, A., 2013, In : Annales de l'institut Fourier. 63, 3

On a flow of transformations of a Wiener space

Najnudel, J., Stroock, D. & Yor, M., 2012, In : Proceedings in Mathematics and Statistics. 22

On some universal sigma-finite measures related to a remarkable class of submartingales

Najnudel, J. & Nikeghbali, A., 2012, In : Stochastic Processes and their Applications. 122, 4

A new kind of augmentation of filtrations

Najnudel, J. & Nikeghbali, A., 2011, In : ESAIM. Probability and Statistics. 15

On some properties of a universal sigma-finite measure associated with a remarkable class of submartingales

Najnudel, J. & Nikeghbali, A., 2011, In : Publications of the Research Institute for Mathematical Sciences. 47

A new construction of the sigma-finite measures associated with submartingales of class Sigma

Najnudel, J. & Nikeghbali, A., 2010, In : Comptes Rendus de l'Académie des Sciences. 348

A remarkable sigma-finite measure associated with last passage times and penalisation problems

Najnudel, J. & Nikeghbali, A., 2010, In : Contemporary Quantitative Finance, Essays in Honour of Eckhard Platen.

Construction of an Edwards' probability measure on $C(\mathbb{R}^+; \mathbb{R})$

Najnudel, J., 2010, In : Annals of Probability. 38, 6

A global view of Brownian penalizations

Najnudel, J., Roynette, B. & Yor, M., 2009, In : MSJ Memoirs, Mathematical Society of Japan. 19

Scaled limit and rate of convergence for the largest eigenvalue from the generalized Cauchy random matrix ensemble

Najnudel, J., Nikeghbali, A. & Rubin, F., 2009, In : Journal of Statistical Physics. 137, 2

Penalizations of the Brownian motion by a functional of its local times

Najnudel, J., 2008, In : Stochastic Processes and their Applications. 118, 8

A remarkable sigma-finite measure on $C(\mathbb{R}^+; \mathbb{R})$ related to many Brownian penalizations

Najnudel, J., Roynette, B. & Yor, M., 2007, In : Comptes Rendus de l'Académie des Sciences. 345, 8

Integration with respect to self-intersection local time of a one-dimensional Brownian motion.

Najnudel, J., 2007, *Séminaire de Probabilités, Volume XL.*

Pénalisations de l'araignée brownienne (Penalizations of the Brownian spider)

Najnudel, J., 2007, In : Annales de l'institut Fourier. 57, 4

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Employment

Reader in Mathematics

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15 Sep 2018 → present

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