

Sarah Timhadjelt

PERSONAL DETAILS

Birth August 17, 1995
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EDUCATION

Classe préparatoire

Lycée Thiers, Marseille

2013-2016

- 2013- 2014 First year in MPSI (Mathematics, Physics and Engineering Sciences)
- 2014-2016 MP* (Mathematics and Physics)

ENS Rennes

ENS Rennes, Bruz and Université Rennes 1, Rennes

2016-2019

- 2016-2017 Licence 3 and magistère in mathematics.
First semester : Differential equations, Lebesgue integral, Statistic physics for Magistere, Group theory, General topology.
Second semester : Vector spaces and differential calculus, Probability Fundamentals, Holomorphic function
- 2017-2018 Master 1 Mathematics and applications, fundamental mathematics
First semester : Functional analysis, Differential Equations and transport phenomenon, Markov chains and martingals, Basics of linear algebra.
Second semester : Distributions and Fourier analysis, Special and holomorphic functions, Statistics.
- 2018-2019 Preparation to the agrégation of mathematics. Rank : 78

ENS Lyon/ 4th year ENS Rennes

ENS Lyon and Université Lyon 1, Lyon

2019-2020

- First semester : Stochastic calculus, Percolation and Ising model, Random Walks on graphs.
- Second semester : High dimensional phenomena, Integral probability, Random graphs.

INTERNSHIP EXPERIENCE

First year internship

University of Paris 8, Supervisor : David Gérard-Varet

Study of partial differential equations, especially Navier-Stokes and Euler equations. Initiation to the Vortex method. Duration : 4 weeks

May 2017

Second year internship

Universidad autonoma de Madrid, Supervisor : Antonio Cuevas

Study of density estimation. Initiation to non-parametric estimations. Duration : 9 weeks

May 2018

Fourth year internship

Luminy Institute of Mathematics, Marseilles. Supervisors : Charles Bordenave

Spectrum study of random permutation matrices polynomials. Duration : 18 weeks

April 2020

CURRENT OCCUPATION

PHD student position

Centre de Mathématiques et d'informatiques. Supervisor : Charles Bordenave

Study of random matrices asymptotic freeness. More specifically I study the asymptotic behavior of the spectra of an operator when the randomness of the finite operator is weakened, using weakened notion of asymptotic freeness (*freeness with amalgamation over a subalgebra*).

sept. 2020

PREPRINT

Spectral gap of convex combination of a random permutation and a bistochastic matrix
arXiv preprint arXiv:2310.16434, 2023

2023

TEACHING

1st Semester <i>"Introduction à l'Analyse", Lecture and tutorial for 1st years of classes préparatoires intégrées,</i> Polytech Marseille, Saint-Jérôme.	2020-2021
Stage Hippocampe <i>3 days supervising middle school students around ludic mathematic problems,</i> IREM d'Aix-Marseille, Luminy	2020-2021
2nd Semester <i>"Analyse complexe", tutorial, 1st year of Master "Mathématiques et Applications". Lecture by Nizar Demni.</i> Chateau-Gombert, Aix-Marseille University	2021-2022
2nd Semester <i>"Analyse 3", tutorial, 2nd year of Licence "Mathématiques et Informatiques"</i> Saint-Charles, Aix-Marseille University	2021-2022
1st Semester <i>"Mathématiques 1", tutorial and lecture, 1st year of Licence.</i> Saint-Charles, Aix-Marseille University	2022-2023
2nd Semester <i>"Analyse complexe", tutorial, 1st year of Master "Mathématiques et Applications". Lecture by Nizar Demni.</i> Chateau-Gombert, Aix-Marseille University	2022-2023

TALK IN SEMINARY AS INVITED SPEAKER

Institut de Mathématiques de Bordeaux <i>Spectral gap of the convex combination of a random permutation and a deterministic matrix,</i> Seminary: "Images, Optimisations et Probabilités".	Nov. 2023
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TALK IN AUTUMN SCHOOL

Aussois, Centre Paul Langevin <i>Spectral gap of the convex combination of a random permutation and a deterministic matrix,</i> Workshop for Phd and Postdoc: "École d'Automne du GDR MEGA 2022".	Oct. 2022
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TALK IN WINTER SCHOOL

Aussois, Centre Paul Langevin <i>Introduction to free probability applications in random graph spectral study,</i> Dynamic systems winter school "Sixième École d'Hiver en dynamiques d'Aussois".	Dec. 2023
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CONTRIBUTED TALK IN CONFERENCE

Lille, Paul Painlevé Laboratory <i>Spectral gap of the convex combination of a random permutation and a deterministic matrix,</i> GDR MEGA workshop: "Random matrices meet random permutations".	April 2022
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PARTICIPATION IN POSTER SESSION

Kyoto, RIMS Kyoto university <i>Spectral gap of the convex combination of a random permutation and a deterministic matrix,</i> Conference: "Random matrices and Applications".	June 2023
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REFEREES

Charles Bordenave
Camille Male
Guillaume Aubrun

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Skills

Languages

French (mother tongue)
English (fluent, TOEIC 900)
Spanish (advanced)

Software

PYTHON, L^AT_EX, SCILAB, R