CURRICULUM VITAE

Personal details

Dr. Henri Elad Altman

Email : henrialtman@mi.fu-berlin.de
Phone: +49 1522-511-6143
Homepage: https://www.mi.fu-berlin.de/math/groups/stoch/members/PostDoc/Elad_Altman.html

Employment

Since Oct. 2021: Dirichlet Postdoctoral Fellow in Mathematics at Freie Universität Berlin
2019-2021: Chapman Fellow in Mathematics at Imperial College London.

- Conducted research on properties of solutions to singular stochastic partial differential equations
- Taught a MSc (3rd year) course of "Measure and Integration"
- Supervised 4 undergraduate research projects and mentored 7 undergraduate students

Qualifications

2016-2019 **PhD degree in Mathematics** at Sorbonne Université in Paris, France.

- Thesis *Integration by parts fomulae for the laws of Bessel bridges and associated SPDEs*, defended on 18 April 2019. Advisor: Lorenzo Zambotti. Referees: Arnaud Debussche and Tadahisa Funaki.
- Derived integration by parts formulae for the laws of Bessel bridges of dimension smaller than 3, introduced a new family of singular SPDEs involving renormalized local times, constructed a weak solution for two particular instances of these equations.
- Delivered 20 talks in research conferences

2014-2015 Master's degree in Probability, Université Paris-Sud, mention très bien
2012-2014 Student (Bachelor) in Mathematics at École Normale Supérieure in Paris

Funding

April-July 2019 Secured a funding by the FSMP for a research project at the University of Toronto, supervised by Jeremy Quastel, on hydrodynamic limits of particle systems.

Teaching and Supervision

1) **Freie Universität Berlin (since Oct. 2021):**

Winter Semester 2021-2022: Lecturer for the Master course "Statistics for Data Science"

2) **Imperial College London (2019-2020):**

2020-2021 Supervisor of a MSci (4th year) project on applications of the signature method to high-frequency trading; supervised an MSc project in stochastic analysis
Autumn 2020 Lecturer: "Measure and Integration", 3rd year module (taught online to 70 students, 25 recorded lectures and 5 problem classes)
Summer 2020 Supervisor of 4 UROP (2nd year) projects on applications of the signature method to handwritten character recognition
Spring 2020 Supervisor of a MSci (4th year) research project in stochastic analysis
2019-2020 Tutor: mentored 7 undergraduate students in Mathematics
Autumn 2019 Teaching assistant: 3rd year module "Measure and Integration"

3) Sorbonne Université (2016-2019):

Spring 2019 Teaching assistant: undergraduate (3rd year) Probability course (monitored Problem classes, 30 hrs total)
Autumn 2017 Teaching assistant: undergraduate (3rd year) course 'Measure theory, integration and probability' for the ISUP program (monitored problem classes, 90 hrs total)

Evidence of esteem

1) Gave the following invited talks in research conferences:

- «On scaling limits of dynamical wetting models in the discrete and the continuum»
  - online presentation for the TU Berlin SPDE Seminar, July 2020.
- « A wetting model in the continuum »
  - presentation for the probability seminar at the Hausdorff Center for Mathematics, Bonn, Germany, December 2019.
- « Pinning models : discrete and continuous, static and dynamic »
  - presentation for the conference « Random Partial Differential Equations » at CIRM, Marseilles, France, April 2019.
- « Bessel stochastic PDEs and renormalized local times »
  - presentation for the seminar of the CRC « Mathematics of emergent effects », Bonn, Germany, December 2018.
- « An SPDE for the law of the modulus of a Brownian bridge »
  - talk for the Oxford-Berlin meeting, Oxford, November 2018.
- « Bessel S(P)DEs : a story of renormalisation »
  - presentation for the seminar at the Max Planck Institute, Leipzig, January 2019.
  - presentation for the seminar of the programme **"**Scaling limits, rough paths, quantum field theory" at the Isaac Newton Institute, Cambridge, November 2018.
- « Bessel-like SPDEs »
  - contributed talk for the RISM school « Developments in Stochastic Partial Differential Equations », Varese, Italy, July 2018.
  - talk for the Berlin-Oxford meeting at WIAS, Berlin, June 2018.
- « Renormalization phenomena in SPDEs with reflection »
  - talk for the RMR conference « Rough paths, Malliavin Calculus and Applications », Rouen, France, June 2018.
- « Random obstacle problems and integration by parts formulae for the laws of Bessel bridges »
  - presentation for the seminar of the Maths Department of Université d'Orléans, June 2018.
- « Integration by parts formulae for the laws of Bessel bridges and SPDEs with reflection »
  - contributed talk for the conference « Stochastic Partial Differential Equations » at CIRM, Marseilles, May 2018.
  - presentation for the Thursday seminar of the research group « Rough paths, stochastic partial differential equations and related topics » at TU Berlin, April 2018.
  - short talk for the 2nd Haifa Probability School at Technion, Haifa, December 2017.
  - presentation for the Probability seminar at Luxembourg University, November 2017.
- « Bismut-Elworthy-Li formulae for Bessel processes »
  - short talk for the PIMS Summer School, Vancouver, June 2017.
  - short talk for the Berlin-Oxford meeting, Berlin, May 2017.
  - presentation for the Maths PhD seminar at Université Paris-Dauphine, May 2017.
  - presentation for the Probability Seminar at ENSTA Paris Tech, Paris, April 2017.
- « Reflecting SPDEs and Bessel bridges »
  - presentation for the Saint-Flour Summer School, France, July 2016.

2) Reviewed 8 articles for the following journals

- Annals of Probability
- Annales de l'Institut Henri Poincaré
- Electronic Communications in Probability
- Communications in Mathematical Physics
- Stochastic Analysis and Applications

3) Outreach

- Co-animated a workshop for the outreach event "Maths in the real life" of New Scientist Live, London, September 2018.
- Delivered an outreach presentation on the Brownian motion using an augmented reality device for the event Holomath, March and July 2018, Paris.
- Sat in the jury of the French young mathematicians' tournament "TFJM"
- Co-organized the PhD students' seminar at the LPMA, Sorbonne Université, Paris, 2016-2017.

Publications

(1) H. Elad Altman (2021) : "Bessel SPDEs with general Dirichlet boundary conditions." Electron. J. Probab. 26 1 - 36, 2021. https://doi.org/10.1214/21-EJP632

(2) H. Elad Altman (2020): *Integration by parts formulae for the laws of Bessel bridges via hypergeometric functions*, Electronic Communications in Probability, Volume 25, https://projecteuclid.org/euclid.ecp/1593569166#abstract

(3) H. Elad Altman and L. Zambotti (2018): *Bessel SPDEs and renormalised local times*, Probability Theory and Related Fields (2019). https://doi.org/10.1007/s00440-019-00926-0

(4) H. Elad Altman (2018) : *Bismut-Elworthy-Li formulae for Bessel processes*, Séminaire de Probabilités XLIX 2018 – Springer, https://link.springer.com/chapter/10.1007/978-3-319-92420-5_6

Preprints:

(5) J.D. Deuschel, H. Elad Altman, T. Orenshtein (2019): *On the gradient dynamics associated with wetting models*, arXiv preprint 1908.08850, https://arxiv.org/abs/1908.08850

PhD thesis: thesis_revised.pdf