

Personal Informations

Born in Tortona (Italy) on July 19, 1990.
Italian citizenship.
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Academic Informations

Scopus Author ID: 57213605914
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Employment

I am currently a **Post-Doc** at the TU Berlin in the research group of **Peter Friz**
Professional Address: Strasse des 17 Juni 136 office 706, 10587 Berlin
Professional E-mail: bellinge@math.tu-berlin.de

Education

- 2015-2019 **PhD in Mathematics** LPSM Sorbonne Université
Thesis title: “Itô formulae for the stochastic heat equation via the theories of rough paths and regularity structures”
Advisor: **Lorenzo Zambotti**.
- 2013-2015 **MS in Mathematics** *cum laude* University of Pavia
Master’s thesis: “An Introduction to the Theory of Regularity Structures”
Master supervisors: **Lorenzo Zambotti** and **Federico Bassetti**.
- 2014-2015 **Erasmus Program** Université Pierre et Marie Curie, Paris
- 2010-2013 **BS in Mathematics** *cum laude* University of Pavia
Bachelor thesis: “Harmonic Functions, Capacity and Wiener’s Criterion”
Bachelor supervisor: **Enrico Vitali**.
- 2009 **High school diploma** (specialisation in classical studies)
Graduation 100/100.

Awards

- July 2016 **“UBI Banca” Award** University of Pavia, Italy
Best mathematics master student during academic years 2013-2015.

Research Interests

Stochastic analysis
Stochastic and deterministic partial differential equations
Rough analysis (Regularity structures and Rough paths)
Algebraic structures in probability

Published Articles in peer-reviewed journals

4. C. Bellingeri, P. K. Friz, S. Paycha, R. Preiß, *Smooth rough paths, their geometry and algebraic renormalization* Vietnam J. Math. 50 (2022), no. 3, 719–761.
3. C. Bellingeri, P. K. Friz, M. Gerencsér, *Singular paths spaces and applications*, Stoch. Anal. Appl. 40 (2022), no. 6, 1126–1149.
2. C. Bellingeri, A. Djurdjevac, Peter K. Friz, N. Tapia, *Transport and continuity equations with (very) rough noise*, Partial Differ. Equ. Appl. 2 (2021), no. 4, Paper No. 49, 26 pp.
1. C. Bellingeri, *An Itô type formula for the additive stochastic heat equation*, Electron. J. Probab. 25 (2020), Paper No. 2, 52 pp.

Accepted Articles in peer-reviewed journals

2. C. Bellingeri, N. Gilliers, *On the Signature of a Path in an Operator Algebra* Arxiv Preprint arXiv:2102.11816. to appear at SIGMA Symmetry Integrability Geom. Methods Appl.
1. C. Bellingeri, *Quasi-geometric rough paths and rough change of variable formula*, Arxiv Preprint arxiv:2009.00903 to appear at Ann. Inst. Henri Poincaré Probab. Stat.

Other Academic contributions

1. C. Bellingeri, *Statistiques des traductions françaises des Rerum Vulgarium Fragmenta*, Methodological note in the monograph by R. Raimondo *Le Phenix Poète et les Alouêtes*, Peter Lang edition, Bruxelles (2021).

Talks in conferences

- Jun. 2022 **Between singular SPDEs and stochastic calculus: the KPZ equation**
Short talk at 3rd Italian Meeting on Probability and Statistics, Bologna
- Mai. 2022 **A Young-type Euler Mclaurin formula**
Short talk at the 15th Young Researchers Berlin-Oxford meeting, Berlin.
- Dec. 2021 **“Smooth” rough paths**
Talk at GDR TRAG Young research meeting, IHP
- Nov. 2021 **A geometric approach to renormalisation on “smooth” rough paths**
Short-talk at Higher Structures Emerging from Renormalisation, ESI
- Aug. 2021 **Beyond geometric rough paths**
Web-talk at Journées MAS 2020-2021
- Jun. 2021 **Ito formulae for singular SPDEs**
Web-talk at 8th ECM, session on Stochastic Evolution Equations.
- Mar. 2021 **The non-commutative signature of a path**
Web-talk at “Pathwise Stochastic Analysis and Applications”, CIRM.

- Feb. 2021 **Higher order non-commutative rough paths**
Web-talk at 14th Young Researchers Berlin-Oxford meeting.
- Aug. 2020 **Singular path spaces and applications**
Web-talk at the Bernoulli-IMS One World Symposium.
- Jun. 2020 **Singular Hölder spaces and applications**
Web-Talk at the Conference Stochastic Analysis Brats, Pisa.
Singular rough paths
Short web-talk at the 13th Young Researchers Berlin-Oxford meeting, Berlin.
- Feb. 2020 **Transport equations with low-regularity geometric rough noise**
Short talk at 3rd Haifa Probability School, Technion Haifa.
- Oct. 2019 **Quasi-geometric rough paths and rough change of variable formula**
Talk at the conference GDR Renormalisation, Calais.
- Jun. 2019 **Quasi-tensor algebra and rough paths theory**
Short talk at 2nd Italian Meeting on Probability and Statistics, Vietri sul mare
- May 2019 **Change of variable formulae on the SHE**
Talk at 11th Young Researchers Berlin-Oxford meeting, Berlin.
- Apr. 2019 **Rough change of variable formulae on the SHE**
Talk at the conference Random Partial Differential Equations, CIRM Marseille.
- Jul. 2018 **Rough Stochastic Heat Equation**
Short talk at the 9th Young Researchers Berlin-Oxford meeting, Berlin.
- Jun. 2018 **Stochastic Heat Equation and Rough Paths**
Talk at the conference “Rencontres Mathématiques de Rouen”, Rouen.
- Mai. 2017 **Ito formula on branched rough paths and some interesting consequences**
Short talk at the 7th Young Researchers Berlin-Oxford meeting, Berlin.

Invited Talks at mathematics departments

- Nov. 2022 **PhD Seminar in Advanced Stochastic Modelling**
University of Vienna
- Oct. 2021 **Pavia-Milan Seminar in Probability and Statistics**
University of Pavia, online talk
- Jul. 2021 **Research Seminar in Mathematical Analysis**
University of Potsdam, online talk
- Mai. 2021 **PhD Seminar of LPSM**
Sorbonne Université, online talk
- Oct. 2019 **Research Seminar in Mathematical Analysis**
University of Potsdam
- Jun. 2019 **PhD Seminar of LPSM**
Sorbonne Université.
- Apr. 2019 **Seminar of the research group FOR2402**
Technical University of Berlin.
- Feb. 2018 **Probability Seminar of ENSTA Paris**
Polytechnic Institute of Paris.
- Jan. 2018 **Seminar of the research group FOR2402**
Technical University of Berlin.

Schools and Workshops

- Sep. 2022 **The SPDEvent** University of Bielefeld
Interacting Particle Systems and Applications University of Trento.
- Jul. 2022 **Rough Analysis and data Science** Imperial College, London.
- Nov. 2021 **Higher Structures Emerging from Renormalisation** ESI Vienna.
- Sep. 2021 **PDE and Randomness** Bath University.
- May 2021 **SPDEs & friends** TU Berlin.
- Feb. 2021 **Cumulants in Stochastic Analysis** TU Berlin.
- Jan. 2021 **Scaling Limits from Microscopic to Macroscopic Physics** CIRM.
- Jul. 2020 **PDE and Randomness** One World Probability Summer School.
- Feb. 2020 **3rd Haifa Probability School** Technion, Haifa.
- Oct. 2019 **Singular SPDEs and Related Topics** HIM, Bonn.
- Sep. 2019 **New Frontiers in Singular SPDEs and Scaling Limits** HIM, Bonn.
- Mar. 2019 **Spring School on Random Interfaces** University of Augsburg.
- Dec. 2018 **Scaling limits & SPDEs** Newton Institute, Cambridge.
- Sep. 2018 **Renormalisation in QFT and in SPDEs** Newton Institute, Cambridge.
- Jul. 2018 **Developments in SPDEs (in honor of G. Da Prato)** RISM, Varese.
- Dec. 2017 **2nd Haifa Probability School** Technion, Haifa.
- Jul. 2017 **18th Luis Santaló Summer School** UIMP, Santander.
- Jun. 2017 **PIMS-CRM Summer School in Probability** UBC, Vancouver.
- Feb. 2017 **Recent Development in Singular Stochastic PDEs** HIM, Bonn.
- Aug. 2016 **Singular Random Dynamics** CIME, Cetraro.
- Jul. 2016 **46th Summer School on Probability** LMBP, Saint-Flour.
- Feb. 2016 **Path in, to and from renormalisation** University of Potsdam.
- Jul. 2015 **45th Summer School on Probability** LMBP, Saint-Flour.

Teaching Activity

- 2022-2023 **Mathematics for Economics** Lecturer and Teaching Assistant
Faculty of Economics, TU Berlin.
- 2021-2022 **Calculus 1 for Engineering** Teaching Assistant
Faculty of Engineering, TU Berlin.
Probability for Engineering Teaching Assistant
Faculty of Engineering, TU Berlin.
Stochastic calculus for Mathematicians Teaching Assistant
Faculty of Engineering, TU Berlin.
- 2020-2021 **Calculus 2 for Engineering** Teaching Assistant
Faculty of Engineering, TU Berlin.
Probability for Engineering Teaching Assistant
Faculty of Engineering, TU Berlin.
- 2018-2019 **Measure theory and Probability** Teaching Assistant
Third year students of Mathematics, Sorbonne Université.
Stochastic Calculus and applications to finance Teaching Assistant, Master 1, ISUP.

- 2016-2017 **Measure theory and Probability** Teaching Assistant
 First year students of Statistics, ISUP.
Advanced Calculus Teaching Assistant
 First year students of Mathematics, UPMC.
Matrix and linear Algebra Teaching Assistant
 First year students of Chemistry, UPMC.
- 2015-2016 **Sequences and Integrals** Teaching Assistant
 First year students of Mathematics, UPMC.
- 2013-2014 **General Mathematics** Tutoring
 First year students of Biological sciences, University of Pavia.
Numerical Methods Tutoring
 First year students of Chemical sciences, University of Pavia.

Academic Responsibilities

- Oct. 2023 Organiser of the mini-workshop:
**Combinatorial and Algebraic Structures
 in Rough Analysis and Related Fields**
 at MFO, Oberwolfach,
 with Yvain Bruned, Ilya Chevyrev and Rosa Preiß
- Jun. 2022 Organiser of the session **Rough analysis and applications**
 at the 3rd Italian Meeting on Probability and Statistics,
 with Lucio Galeati
- Dec. 2021-
 Feb. 2022 Organiser of the **DFG FOR2402** seminar at TU Berlin,
 with Tom Klose.
- Dec. 2019 Organiser of the **12th Oxford-Berlin Research Meeting**
 with Terry Lyons, Peter Friz and Patric Bonnier.
- Sep. 2016-
 Jun. 2017 Organiser of the **Phd weekly seminar** at LPMA,
 with Henri Elad-Altman, Michel Pain and Yann Chiffaudel.

Editorial Activity

Peer review: Electronic Communications in Probability, Bernoulli Journal,
 Annales de l'Institut Henri Poincaré, Probabilités et Statistiques,
 Mediterranean Journal of Mathematics,
 Journal of Nonlinear Modeling and Analysis.

Languages and Computer Skills

Languages: Italian (mother tongue),
 English, French (professional knowledge)
 German (good knowledge), Spanish (beginner).

Computer: C, MATLAB, L^AT_EX, HTML.