Nicolas
MOENCH

Curriculum Vitae

IECL, Nancy, Office 303
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Education

2022-2025 **PhD in Mathematics**, At IRMAR (Rennes), under the supervision of Ismaël Bailleul., Thesis titled "Study of singular partial differential equations"

2021 **Agrégation in Mathematics**, *Passed, ranked 3rd.*

2018-2022 **Magistère in Mathematics, ENS Rennes**, Bachelor's and Master's degree in fundamental mathematics (highest honors), preparation for the mathematics agrégation, Master MEEF (highest honors).

2016-2018 **Undergraduate Preparatory Classes MPSI/MP***, Lycée Kleber, Strasbourg, Admitted to ENS Rennes via competitive examination.

2016 **Scientific Baccalaureate**, Lycée Freppel, Obernai.

Positions

2025- **Postdoctoral Researcher**, In the team of Yvain Bruned (ERC Project LoRDeT), At IECL (Nancy).

Research Areas

Stochastic Analysis, *Singular stochastic PDEs, Anderson operators, Regularity structures, Mean field models.*

Teaching

2022-2025 **Teaching Assistantship, ENS Rennes**, *64h/year*, Tutorials in general topology (undergraduate level), supplementary lectures for the agrégation, mock written and oral agrégation exams, supervision of undergraduate research projects (TER).

2014-2018 **Mathematics Tutoring**, High school level

Publications

2023 **Mean Field singular stochastic PDEs**, *with Ismael Bailleul*, `http://arxiv.org/abs/2305.02603` , J. Éc. Polytech., Math. 13, 1099-1149 (2026).

2024 **Local expansion properties of paracontrolled systems**, *with Ismael Bailleul*, `https://arxiv.org/pdf/2412.12670.` , J. Math. Soc. Japan 78, No. 3, 863-929 (2026).

Preprints

2025 **Unique continuation properties for the continuous Anderson operator in dimension 2**, Preprint `https://arxiv.org/pdf/2305.02603`

2026 **A general paracontrolled ansatz for singular SPDEs**, *with Yvain Bruned.*, Preprint `https://arxiv.org/pdf/2608.09700`

Research Talks

October 2023 **ANR smooth Meeting**, *IECL Nancy*, "Mean field singular SPDES".

October 2023 **Landau seminar**, *IRMAR Rennes*, "Mean field singular SPDES".

October 2024 **Landau seminar**, *IRMAR Rennes*, "Introduction to paracontrolled calculus".

April 2025 **Probability and Statistics Seminar**, *IECL Nancy*, "Local expansion properties of paraproducts".

May 2026 **Mini-course on paracontrolled calculus**, *Chenggong University, Kunming.*

June 2026 **2026 China France Joint Workshop on PDEs and their Applications** , *Tianyuan Mathematics Research Center*, "A general paracontroled ansatz for singular SPDEs".

June 2026 **TRAG 2026**, *IMT, Toulouse*, "A general paracontroled ansatz for singular SPDEs".

October 2026 **Probability and Statistics Seminar**, *IECL Nancy.*

October 2026 **MatRisk 2026**, *CIRM Marseille.*

Computer Skills

- Python
- Latex
- Linux
- C

Languages

- **English:** C1, TOEIC (taken in 2020)
- **German:** B1