

Corentin Le Bars

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Summary

I am a PhD student in the Topology and Dynamics team in Laboratoire de Mathématiques d'Orsay, Université Paris-Saclay. I work in geometric group theory, with a focus on boundary and rigidity theory, random walks and limit laws, hyperbolic and CAT(0) spaces, buildings and their boundaries.

Education

2020-2023 **PhD thesis in Mathematics**

Université Paris-Saclay, Laboratoire de Mathématiques d'Orsay, France

Advisor: Jean Lécureux

Subject: Random walks on CAT(0) spaces

2016-2020 **Master degree in advanced Mathematics**

École Normale Supérieure de Lyon, France. Program: Geometry and Group actions

2017 - 2018: ERASMUS exchange at Imperial College of London

March - July 2019: Master thesis at IMAG, Montpellier, on Kazhdan Property (T). Advisor: Thomas Haettel

Sept 2019 - Jan 2020: Research internship at LMO Paris-Saclay on random walks and hyperbolic spaces. Advisor: Jean Lécureux

Feb 2020 - July 2020: Research internship at LMO Paris-Saclay on Mapping Class Groups. Advisor: Camille Horbez

2013-2016 **CPES Multidisciplinary Undergraduate degree**

Mathematics - with a minor in Physics

Bachelor's degree at Dauphine - PSL (MIDO). Rank: 1st/163 students.

Publications

1. *A Central Limit Theorem on CAT(0) spaces with contracting isometries*, arXiv:2209.11648 (2022)
2. *Random walks and rank one isometries on CAT(0) spaces*, arXiv:2205.07594 (2022)

Talks and Seminars

International conferences

- Boundary theory, with applications on super-rigidity and random walks, Mini-course at Institut Henri Poincaré, Groups acting on fractals, self-similarity and hyperbolicity (May 2022)
- Random walks on CAT(0) spaces with rank one isometries, Kleebach meeting, ANR AGIRA project (September 2021)

Seminar talks

- Limit laws for random walks in CAT(0) spaces with rank one isometries, Laboratoire de Mathématiques d'Orsay (June 2022)

- Marches aléatoires et isométries de rang 1 dans les espaces $CAT(0)$, Seminar Groups and Operator Algebras, Laboratoire de Mathématiques d'Orsay (February 2022)
- "Coxeter groups", PhD student workshop, Laboratoire de Mathématiques d'Orsay (October 2020)
- "Poisson boundaries and entropy criteria", PhD student workshop, Laboratoire de Mathématiques d'Orsay (April 2021)

Conferences attended

Events

- Workshop on Geometry and Machine Learning, Heidelberg University (July 2022)
- IHP trimester "Groups Acting on Fractals, Hyperbolicity and Self-similarity", Paris (April-June 2022)
- "Hyperbolic groups and their generalisations, IHP, Paris (June 2022)
- "Self-similarity in groups, trees and fractals", IHP, Paris (May 2022)
- "Mapping class groups and $Out(F_N)$ ", IHP, Paris (April 2022)
- CIRM: Preparatory School for the IHP program, Marseille (April 2022)
- "Topological and Homological Methods in Group Theory", Bielefeld University (March 2022)
- Internal meeting of the ANR AGIRA project, Kleebach (September 2021)
- Young Geometric Group Theory X, (July 2021)
- CMI-HIMR Summer School on Dynamics and Geometry, Bristol (June 2021)

Seminars and colloquia

- Groups and Operator Algebras seminar, Université Paris-Saclay (2021-2022)
- Seminar of the "Topology and Dynamics" team, Université Paris-Saclay (2020-2023)
- Member of the workshop "Coxeter Groups", Laboratoire de Mathématiques d'Orsay (October 2020)
- Member of the workshop "Poisson boundaries and entropy criteria", Laboratoire de Mathématiques d'Orsay (April 2021)

Teaching Experience

Teaching Assistant

2020-2023	Analyse, séries et intégrales, Université Paris-Saclay, Licence Mathématiques MEU201
2022-2023	Prérentée cycle ingénieur Polytech Paris-Sud S5
2021-2022	Analyse et Géométrie, LDD2 Université Paris-Saclay
2020-2021	Algèbre et Géométrie, Licence 1 Mathématiques, Université Paris-Saclay

Languages

French (native), English (fluent, Cambridge Advanced Exam, TOEFL 102)