

BRICE FLAMENCOURT

E-mail: brice.flamencourt@ens-lyon.fr Date of birth: 24/09/1995 (29 years old)

Nationality: French

PROFESSIONAL SITUATION

Post-doctoral position at the École Normale Supérieure de Lyon, Unité de mathématiques Pures et Appliquées (UMPA), in the team Géométrie, Groupes et Dynamique.

Address: 46, allée d'Italie, 69364 Lyon, France.

Subjects of work: Riemannian geometry, Spectral analysis, Asymptotic analysis, Spin geometry, Conformal geometry, Weyl structures.

ACADEMIC POSITIONS

October 2024 -	Postdoc position at ENS Lyon, Unité de Mathématiques Pures et Appliquées (UMPA).
October 2022 - September 2024	Postdoc position at the Universität Stuttgart, Institut für Geometrie und Topologie.

EDUCATION AND DEGREE

2019 - 2022	PhD student at the Laboratoire de Mathématiques d'Orsay under the direction of Andrei Moroianu and Konstantin Pankrashkin. Phd defended on 11/07/2022. Title of the Phd: On some problems on spectral analysis, spin geometry and conformal geometry
2019 - 2021	Master Degree of Ecole Normale Supérieure Paris-Saclay (obtained 01/06/2021).
2018 - 2019	Master Degree in Analysis, Modelisation, Simulation at the Université Paris-Sud (obtained 18/09/2019).
2017 - 2018	Ecole Normale Supérieure Paris-Saclay: FESUP Master (obtained 28/01/2019) and preparation to the <i>Agrégation</i> in mathematics (obtained, ranked 40th).
2015 - 2017	<i>Diplôme d'ingénieur</i> of the Ecole Nationale des Ponts et Chaussées, speciality in Mathematics and Computer Science (obtained 02/09/2020).

PUBLICATIONS

Published articles:

The characteristic group of conformally product structures,
Annali di Matematica Pura ed Applicata, DOI: 10.1007/s10231-024-01479-3.

Locally conformally product structures,
International Journal of Mathematics, 35 (5), 2450013 (2024).

Torsion-free connections on G-structures,
Differential Geometry and its Applications, **91**, 102075 (2023).

Cauchy Spinors on 3-Manifolds,
(with Sergiu Moroianu), Journal of Geometric Analysis, **32**, 186 (2022).

A generalized MIT Bag operator on spin manifolds in the non-relativistic limit,
Journal of Geometry and Physics, **178**, 104534 (2022).

Strong coupling asymptotics for δ -interactions supported by curves with peaks
(with Konstantin Pankrashkin), Journal of Mathematical Analysis and Applications, **491**, 124287 (2020).

Preprints :

On decomposable LCP structures (with Andrei Moroianu), arXiv:2406.11595 (2024).

Weyl structures with special holonomy on compact conformal manifolds (with Florin Belgun and Andrei Moroianu), arXiv:2305.06637 (2023).

PROJETS

Member of the Prococope project 57650868 (Allemagne) / 48959TL (France) (2023-2024)

Member of the project Conformal Aspects of Geometry and Dynamics- PNRRIII-C9-2023-I8
Project CF149/31.07.2023 (01/01/2024 - 30/06/2026)

EXPERIENCE

- 07/2018 - 08/2018 **Visit at Columbia University (New York, USA)**
Study of reproductive kernels for applications in machine learning.
Work realized under the direction of Henry Lam.
- 06/2017 - 08/2017 **Internship at the INRIA (Palaiseau, France)**
Research on high order elements for the finite elements method applied
to fluid mechanics. Internship under the direction
of Frederic Alauzet and Loïc Maréchal.

TALKS AND SEMINARS

Conferences and workshops organization:

- 10/2023 *The crazy world of Arthur Besse*, Stuttgart University,
co-organized with A. Moroianu, P. Schwahn et U. Semmelmann.

I gave talks at the following seminars:

- 03/2023 Talk at the seminar of the analysis team in Oldenburg
02/2023 Talk at the seminar of the team Géométrie et Analyse Globale in Nantes
01/2023 Talk at the seminar of the geometry team of the IECL in Nancy
11/2022 Talk at the seminar of Analysis, Dynamic and Modeling
at the Universität Stuttgart
04/2022 and 06/2022 Talk at the seminar of the Geometry and Topology team
at the Universität Stuttgart
01/2022 Online talk at the University of Bucarest
03/2021 Online talk at the seminar of the University of Marseille
02/2021 Online talk at a seminar organised by Pavel Exner from Prague
01/2021 Online talk at the seminar of Oldenbourg University
11/2019 Invitation at the Technical University of Prague
10/2019 Aspect: Asymptotic analysis and spectral theory

Participations to conferences (I gave a talk to the ones indicated with an (O)):

- 01/2023 Conference "The analysis of relativistic quantum systems" at the CIRM
08/2022 Conference "The Dirac equation" à Bordeaux (O)
10/2019 Conference "Aspect'19": Asymptotic analysis and spectral theory (O)

Participations to workshops :

- 11/2022 Oberwolfach Graduate Seminar: Geometry and Topology of
Compact Homogeneous Spaces, Banach Center, Bedlewo
11/2021 BIRS Locally Conformal Symplectic Manifolds:
Interactions and Applications

TEACHING

2022 - 2023	Topology (Universität Stuttgart, fourth semester) - Assistant lecturer.
2022 - 2023	Höhere Mathematik 3, mathematic lecture for engineers (Universität Stuttgart, third semester) - Assistant lecturer.
2021 - 2022	Fundamental tools for mathematics (IUT Orsay, first year) - Chargé de TD.
2021 - 2022	Logic and basis for mathematics (IUT Orsay, first year) - Chargé de TD.
2020 - 2021	Linear algebra (IUT Orsay, first year) - Chargé de TD.
2020 - 2021	Functional Analysis (IUT Orsay, first year) - Chargé de TD.
2019 - 2020	Graphs and Automaton (IUT Orsay, first year) - Chargé de TD.