

Mélanie Theillière

Postdoctoral Researcher in Mathematics

Professional experience

- 2020–24 **Postdoctoral researcher**, University of Luxembourg, member of the ANR project SoS - Structures on Surfaces, member of the Hevea project
- 2019–20 **ATER**, *Institut Camille Jordan*, Univ. Lyon, France
- 2016–20 **PhD in Mathematics**, *ICJ, Univ. Lyon*, France
Date of the defense: December 11th 2019, *Advisors*: Vincent Borrelli, Boris Thibert

Research area

Differential Geometry, Differential Topology, h -principle, Convex Integration Theory

Publications (on the left, the date of publication on arXiv)

- 22/03/2023 **The hyperbolic plane in \mathbb{E}^3** (51 pages), co-authors V. Borrelli, R. Denis, F. Lazarus, B. Thibert (ICJ Lyon, G-Scop Grenoble, LJK Grenoble)
- submitted
- 07/09/2021 **Holonomic approximation through convex integration** (11 pages), co-author Patrick Massot (Orsay)
- published at [International Mathematics Research Notices](#)
- 06/09/2020 **Corrugation Process and ϵ -Isometric Maps** (17 pages)
- published at [Actes du séminaire TSG de Grenoble](#)
- 09/11/2019 **Convex Integration Theory without Integration** (35 pages)
- published at [Math. Zeitschrift](#)

Talks (short list)

◆ Outside Europe

- 2022 **Université de Brazzaville, Congo**, Geometry School, mini-courses in programming in Python the Convex Integration
Courant Institute, New York University, USA, Geometric Analysis and Topology Seminar (in remote)
- 2021 **Harvard University**, USA, Widely Applied Mathematics Seminar + a lecture *Convex Integration* (in remote)
Institute for Advanced Study, Princeton, USA, Workshop on the h -principle and beyond, invited talk (in remote)
- 2019 **ICERM**, Providence, USA, Workshop Illustrating Geometry and Topology, a poster

◆ Europe (except France)

- 2022 **Univ. of Luxembourg**, Geometry and Topology seminar

- Heidelberg Experimental Geometry Lab, Germany**, Hegl community seminar
- 2021 **Univ. of Luxembourg**, ANR SoS seminar, Luxembourg (in remote)
- 2019 **Université Libre de Bruxelles, Belgique**, séminaire de géométrie
- ◆ **France** (without seminars)
- 2023 **Braids Meeting 2023, Marseille**, plenary talk
IHP, Paris, Symplectix seminar
- 2022 **Conférence (franco-allemande) des jeunes mathématicien.ne.s en géométrie et analyse, Mulhouse**, talk
Séminaire Quimpériodique, Quimper, Double talk
AMS-SMF-EMS International Congres, Grenoble, session talk
Conference Structures on Surfaces, CIRM, Marseille, short talk
- 2020 **Geometry Day in Creteil, LAMA**, talk
- 2019 **Symplectix + Orsay**, Double talk: séminaire de géométrie, topologie, dynamique d'Orsay + the Symplectix seminar
Forum of Young Mathematicians, Geometry and Interactions, IHP, short talk

Organization of scientific events

- 2019-20 **Co-organizer of the PhD students seminar**, ENS Lyon - Univ. Lyon
- 2017-18 **Co-organizer of "Inter'Actions 2018"**, *Conference for PhD students in applied and theoretical Mathematics*, ICJ Univ. Lyon 1

Teaching

- 2020-24 **Tutor and coordination of MathForge**, (*support for students*), Univ. of Luxembourg
- 2020-24 **Teaching assistant, L2 Maths, Géométrie des courbes et surfaces**, Univ. of Luxembourg
- 2017-20 **Teaching assistant, L1 Fondamentaux des maths I et II**, Univ. Lyon 1

Student supervision

- 2023 **Experimental Mathematics Lab (EML) Projects**, *two groups*, Univ. Luxembourg
- 2023 **Master thesis M2**, *Univ. Luxembourg*
- 2022 **Student seminar M1**, *Univ. Luxembourg*
- 2021 **Bachelor thesis L3**, *Univ. Luxembourg*

Outreach

- 2022 **Writing a Maths Escape Game for the tutoring**, *Univ. of Luxembourg*
- 2020 **Meeting Masters students / Doctorant.e.s, ICJ, Lyon**
- 2017 **Math α Lyon (mathematical activities on a day in high schools)**, *3 days*

Languages

French (native), English

Programming / Software used

C++, Gnuplot (for 2D visualization), ParaView (for 3D visualization), OpenSCAD (3D print)
HTML/CSS, webmaster of <http://hevea-project.fr/>