

# Mélanie Theillière

*Maîtresse de conférences en Mathématiques*

IRMAR  
Université de Rennes  
Campus de Beaulieu, bât. 22-23  
263 avenue du Général Leclerc  
35 042 Rennes, France  
✉ melanie.theilliere@univ-rennes.fr  
Nationalité française

## Professional experience

- 2024-.... **Maîtresse de conférences**, IRMAR, University of Rennes
- 2020-24 **Postdoctoral researcher**, University of Luxembourg,  
member of the Hevea project,  
member of the ANR project SoS - Structures on Surfaces
- 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/flexibility, 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  
- submitted
- 07/09/2021 **Holonomic approximation through convex integration** (11 pages), co-author Patrick Massot  
- published at [International Mathematics Research Notices](#)
- 06/09/2020 **Corrugation Process and  $\epsilon$ -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 Congress, 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

- 2024 **Co-organizer of a Conference MathForge for students (level Bachelor)**, Univ. Luxembourg
- 2024 **Co-organizer of the "Summer school on  $\hbar$ -principle"**, ICMAT, Madrid  
<https://www.icmat.es/schools/2024/h-principle/>
- 2019-2020 **Co-organizer of the PhD students seminar**, ENS Lyon - Univ. Lyon
- 2018 **Co-organizer of "Inter'Actions 2018"**, *Conference for PhD students in applied and theoretical Mathematics*, ICJ Univ. Lyon 1  
<https://interactions18.sciencesconf.org/>

## 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

## Outreach

- 2024 **Collaboration for a project with the "Musée nationale d'histoire naturelle" of Luxembourg for the Museum Days**, *Univ. of Luxembourg*
- 2023 **Writing a Maths Escape Game (highschool level)**, *Univ. of Luxembourg*
- 2017 **Math $\alpha$ Lyon (mathematical activities on a day in high schools)**, *3 days*

## Languages

French (native), English

## Programming / Software used

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