Rubens Longhi

Curriculum Vitae

Personal Information

Institutional Address: Institute for Mathematics, University of Potsdam,
Karl-Liebknecht-Str. 24-25, D-14476 Potsdam, Germany

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Website: Personal pages at the University of Potsdam or at the SPP 2026

Current position

2019–Present **PhD student in Mathematics**, *University of Potsdam*,
Institute for Mathematics (Geometry group).

Supervisor: Prof. Dr. Christian Bär

Topics: A functorial approach to functional spaces on manifolds and vector bundles; Wave front sets of different regularity

Academic Education

2017–2019 **MSc in Theoretical Physics**, *University of Pavia (Italy)*, **Summa Cum Laude**.

Thesis *On the role of boundary conditions in the construction of fundamental solutions for Maxwell's equations on spacetimes with timelike boundary*

Supervisors: Prof. Claudio Dappiaggi & Dr. Nicolò Drago

Internship at the University of Trento (Feb – Jun 2019) with Dr. Nicolò Drago, in the group of Prof. Valter Moretti, Date of Defense: September 24, 2019

2014–2017 **BSc in Physics**, *University of Pavia (Italy)*, **Summa Cum Laude**.

Thesis *On the fundamental solutions for wave-like equations on curved backgrounds*

Supervisors: Prof. Claudio Dappiaggi & Dr. Nicolò Drago

Date of Defense: July 20, 2017

Publications

2020 C. Dappiaggi, N. Drago and **RL**,
On Maxwell's Equations on Globally Hyperbolic Spacetimes with Timelike Boundary,
Ann. Henri Poincaré **21**, 2367–2409 (2020). https://doi.org/10.1007/s00023-020-00929-x
This work is based partly on the MSc thesis

In preparation

RL,
Wave front sets of different regularity through the Radon transform

C. Bär and **RL**,
A functorial approach to functional spaces on manifolds and vector bundles

Selected Talks

Sept 2022 **DMV Annual Meeting 2022**, *Wave front sets of different regularity*, FU Berlin, Berlin (Germany).

2019–2022 **Research seminars of the Geometry group**, University of Potsdam, five talks.

2019–2022 **Blockseminars of the Geometry group**, University of Potsdam & University of Augsburg (Germany), one talk per seminar.

Oct 2019 **44th Local Quantum Physics Workshop *Foundations and Constructive Aspects of QFT***, *On Maxwell's Equations on Globally Hyperbolic Spacetimes with Timelike Boundary*, Institute for Theoretical Physics, Göttingen (Germany).

Attended Conferences, Workshops and Schools

Sept 2022 **Conference *Global Analysis on Manifolds***, *University of Freiburg*, Freiburg (Germany).

July 2022 ***Workshop on Microlocal Analysis***, *UCL*, London (UK).

June 2022 **Conference *Dirac operators in Topology, Geometry and Representation Theory***, *Palazzone della Scuola Normale Superiore*, Cortona (Italy), funded by the SPP 2026.

June 2022 **Conference *Differential Geometry and Geometric Analysis***, *Department of Mathematics*, Florence (Italy), funded by the SPP 2026.

June 2022 **EWM-EMS Summer School *The Cauchy Problem in General Relativity***, *Institut Mittag-Leffler*, Stockholm (Sweden).

Nov 2021 **Meeting *SPP 2026, Second-Phase***, Nuremberg (Germany).

Feb 2020 **Conference *Microlocal and Global Analysis, Interactions with Geometry***, *University of Potsdam*.

Online

Feb 2022 **Conference *Microlocal and Global Analysis, Interactions with Geometry***, *University of Potsdam*.

Feb 2021 **Conference *Microlocal and Global Analysis, Interactions with Geometry***, *University of Potsdam*.

Teaching Experience

2019–Present **Teaching assistant**, *University of Potsdam*.
Exercise classes (in English) for the following MSc courses:

- **Spin Geometry** – Summer 2022, taught by Prof. Dr. Christian Bär
- **Characteristic Classes** – Winter 2021, taught by Prof. Dr. Christian Bär
- **Mathematical General Relativity** – Summer 2021, taught by Prof. Dr. Christian Bär
- **Microlocal Analysis** – Winter 2020, taught by Prof. Dr. Christian Bär
- **Spectral Geometry** – Summer 2020, taught by Dr. Mehran Seyed Hosseini
- **Lorentzian Geometry** – Winter 2019, taught by Dr. Lashi Bandara

2017–2019 **Tutor**, *University of Pavia*.
Tutoring activities to help undergraduate students with the preparation of Math and Physics exams: Basic Mathematics for Engineering, Mathematics for Biological Sciences, Mathematical Physics (Analytical Mechanics) for Physics and Civil Engineering, Computer Methods for Physics, Mathematical Analysis 1 (Calculus) for Mathematics and Physics

Other activities

2021–Present Co-managing the Twitter account of the Geometry group at the University of Potsdam: Geometry@Potsdam

2021–Present Member of the priority programme of the DFG SPP 2026 *Geometry at Infinity* in project 37: *Boundary value problems and index theory on Riemannian and Lorentzian manifolds*

Awards

May 2021 **Co-winner of Berzolari Prize**, *University of Pavia*, for the best MSc thesis in Mathematical Physics at the University of Pavia.

Feb 2020 **Winner of Grazioli Prize**, *Istituto Lombardo Accademia di Scienze e Lettere*, Milano, for the best MSc thesis in Mathematics or Physics of all Lombardy.

2017 **Admission to IUSS (University School for Advances Study) with Scholarship** - Admission on the basis of a competitive national test

2015 **Admission to Collegio Ghislieri with Scholarship** - Admission to the prestigious university College of Merit in Pavia on the basis of a competitive national test

Languages

Italian **Native**

English **Proficient user**

French, German **Basic user**

Date: September 28, 2022