

Curriculum Vitae

Personal information

Name: Luca Accornero

Current position: Postdoctoral fellow at MPIM Bonn

Research profile

I am a differential geometer. My main areas of expertise are the theory of Lie groupoids and multiplicative structures, Poisson geometry, and the geometry of PDEs. Currently, one of my main interests are differentiable stacks and higher structures in differential geometry. I am also interested in differential topology, more precisely in the topology of hyperplane fields on manifold. Furthermore, I am interested in the geometric formulation of classical field theories.

From October 2021 to September 2022 I worked as a risk modeller for a major Dutch bank. My job consisted in building, testing, and maintaining predictive models for the financial risk of the institution.

Publications

Peer reviewed.

- Accornero, L. and Palese, M. "Symmetry transformations of extremals and higher conserved quantities: Invariant Yang–Mills connections". In: *Journal of Mathematical Physics* 62.4 (2021), 043504. DOI: {10.1063/5.0038533}
- Accornero, L. and Palese, M. "The Jacobi morphism and the Hessian in higher order field theory; with applications to a Yang–Mills theory on a Minkowskian background". In: *International Journal of Geometric Methods in Modern Physics* 17.08 (2020), 2050114. ISSN: 1793-6977. DOI: {10.1142/s0219887820501145}
- Accornero, L. and Crainic, M. "Haefliger's differentiable cohomology". In: *Journal of Noncommutative Geometry* (2023), accepted. arXiv: {2012.07777} (math.DG)

Preprints.

- Accornero, L. and Cattafi, F. *A groupoid approach to transitive differential geometry*. 2022. arXiv: {2211.16639} (math.DG)
- Accornero, L. and Cattafi, F. *Pseudogroups of symmetries and Morita equivalences*. 2022. arXiv: {2211.01319} (math.DG)

Work experience

MPIM Bonn

2023 Oct-2024 Sept

Postdoc

I am a postdoctoral researcher at the Max Planck Institute for Mathematics in Bonn.

KU Leuven

2022 Oct-2023 Sept

EOS Postdoc

I have been a postdoctoral researcher at KU Leuven, within the Geometry section. The position was funded by a grant within the Excellence Of Science (EOS) programme. My supervisor was Marco Zambon.

De Volksbank 2021 Oct-2022 Sept
Risk modeller

I have been part of the risk modelling team at de Volksbank, the Netherlands.

Universiteit Utrecht 2017 Fall-2021 Fall
Ph.D. in Mathematics

4-years Ph.D. position supported by the Utrecht Geometry Centre and supervised by Marius Crainic.

Education

Ph.D. in Mathematics 2017 Fall-2021 Fall
Universiteit Utrecht

- Thesis title:
Topics on Lie pseudogroups: Pfaffian groups, Haefliger cohomology and natural bundles.

Master's degree in Mathematics (with honours) 2015 Fall - 2017 Summer
Università degli Studi di Torino

- Thesis title:
Jet prolongations and calculus of variations: second and higher order variations in the framework of the variational sequence.

Bachelor's degree in Mathematics (with honours) 2012 Fall - 2015 Summer
Università degli Studi di Torino

Awards

Silver medal and Luciana Picco Botta award 2019
Università degli Studi di Torino and Department of Mathematics "Giuseppe Peano"
Awarded for the best master thesis in mathematics from my graduation year.

Collegio Universitario "Renato Einaudi" scholarship 2016
Collegio Universitario "Renato Einaudi"
Awarded on the basis of my Master's track record.

Sergio Console award 2016
Department of Mathematics "Giuseppe Peano"
Awarded for the best Bachelor's thesis in geometry from my graduation year.

Agrati industrial group scholarship 2016
Agrati industrial group
Awarded for the best Bachelor's track among children of the Agrati group's employees.

Talks

Chern-Weil characteristic classes for principal groupoid bundles (poster presentation) Oct 31 2023 - Nov 3 2023
Atelier on Higher Structures in Differential Geometry. Lyon, France

Natural bundles as actions of étale stacks <i>Calculus of Variations and Field Theories. Torino, Italy</i>	May 31 2023
Jacobi geometry and deformations of foliations <i>Welcome Home 2022. Torino, Italy</i>	Dec 22 2022
Symmetries and cohomological invariants in differential geometry - a Lie groupoid approach <i>Higher Geometric Structures along the Lower Rhine. Nijmegen, The Netherlands</i>	Nov 4 2022
Cartan geometries and Lie groupoids II <i>Geometric methods in physics. Torino, Italy</i>	Jun 1 2022
Haefliger's differentiable cohomology <i>Friday Fish Seminar Online Edition. Utrecht, The Netherlands</i>	Sept 4 2020
Cohomology of Haefliger groupoids and characteristic invariants of pseudogroups structures <i>Differential Geometry and its Applications. Hradec Králové, Czech Republic</i>	Sept 3 2019
Morse theory along Bracket generating distributions <i>Welcome Home 2019. Torino, Italy</i>	Dec 19 2019
Geometric structures via Pfaffian groupoids <i>Welcome Home 2018. Torino, Italy</i>	Dec 21 2018

Organizational activities

Pure and Applied Differential Geometry - PADGE <i>KU Leuven</i> The PADGE conferences are organized by the KU Leuven Geometry Section approximately every five years and are dedicated to the memory of Franki Dillen (1963-2013).	July 10 - 14 2023
Poisson seminars <i>KU Leuven</i> I was coordinator, together with Karandeep Singh, of the seminar of the symplectic geometry section at KU Leuven.	Feb 02 2022 - May 30 2023
Equivariant cohomology <i>Universiteit Utrecht</i> I organized, together with my colleagues Maarten Mol and Sergej Monavari, a reading seminar on equivariant cohomology.	Oct 01 2018 - Apr 30 2019
Exterior differential systems <i>Universiteit Utrecht</i> I organized, together with my colleague Francesco Cattafi, a reading seminar on exterior differential systems.	Feb 03 2018 - May 28 2018

Teaching experience

Master thesis – Lisa Sasso	2023
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Second reader

I am the second reader for the Master thesis of Lisa Sasso at KU Leuven.

Master seminar in differential geometry

Spring 2020

Main organizer

I was the coordinator of a seminar on the h-cobordism theorem aimed at master students.

The seminar took place at Utrecht University.

Mastermath course "Poisson geometry"

Fall 2019

TA (Master level, advanced)

I was the teaching assistant for the second level Mastermath course "Poisson Geometry", which took place at Utrecht University.

Bachelor level courses

2012-2021

TA (Bachelor level)

During my Ph.D. in Utrecht, I have been teaching assistant at Bachelor level (10 courses in total).

Participation to conferences and workshops

Higher Structures in Geometry

and Mathematical Physics

Apr 17 - 21 2023

CIRM Luminy, France

Atelier on higher structures in differential geometry

Dec 07 - 09 2022

Lyon, France

Poisson 2022 conference

Jul 25 - 29 2022

Madrid, Spain

Global Poisson Webinar

Ongoing

Online

A finite and infinite-dimensional meeting on Lie groupoids,

Poisson geometry and integrability

Aug 16 - 20 2021

Vienna, Austria

Friday Fish Seminar - Online Edition

Spring 2020 - Summer 2021

Online

15th Young researchers workshop in Geometry,

Mechanics and Control

Nov 30 - Dec 04 2020

Online

Junior Global Poisson Workshop

Sept 14 - 16 2020

Online

14th Workshop on Symplectic geometry,

Contact geometry and Interactions (CAST)

Feb 6 - 8 2020

Antwerpen, Belgium

International Conference on Poisson geometry

Dec 9 - 13 2019

Rio de Janeiro, Brazil

Workshop on contact and Poisson geometry <i>Timișoara, Romania</i>	Oct 31 - Nov 2 2019
Differential Geometry and its Applications <i>Hradec Králové, Czech Republic</i>	Sept 2 - 6 2019
Workshop on singular foliations <i>Leuven, Belgium</i>	May 13 - 14 2029
Poisson aan de Waal <i>Nijmegen, The Netherlands</i>	Sept 12 - 14 2018
Poisson 2018 conference <i>Toronto, Canada</i>	Sept 16 - 20 2018
A century of Noether theorems <i>Torino, Italy</i>	May 9 2018
Lie pseudogroups: old and new <i>Utrecht, The Netherlands</i>	Sept 2 - 4 2017
Differential Geometry and its Applications <i>Brno, Czech Republic</i>	Jul 18 - 22 2016