Curriculum vitae et studiorum

Veronika Ertl-Bleimhofer

Contact details
Laboratoire de Mathématiques Nicolas Oresme – CNRS – UMR 6139
Université de Caen Normandie
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veronika.ertl@unicaen.fr

Home page
`https://ertlvroni.github.io/`

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1 Basic information

1.1 Personal details

Ertl-Bleimhofer Veronika
Schleißheimer Straße 80
80797 München, Germany
Tel.: (+49) 89-80997170

Nationality: German
Sex: female
Date of birth: 28th December 1983
Marital status: married

1.2 Work place address and email

Laboratoire de Mathématiques Nicolas Oresme – CNRS – UMR 6139
Université de Caen Normandie
Esplanade de la Paix - CS 14032
14032 Caen Cedex 5
France
Email: veronika.ertl@unicaen.fr

1.3 Languages

German	native language
French	fluent (reading, writing, speaking)
English	fluent (reading, writing, speaking)
Latin	examen latinum (translation, reading, writing)
Italian	elementary (reading, writing, speaking)
Japanese	elementary (reading, writing, speaking)
Spanish	pre-fluent (reading, writing, speaking)
Polish	pre-fluent (reading, writing, speaking)

1.4 Current employment

Jan. 2025 – present	**Université de Caen en Normandie**, France Chaire de professeur junior

1.5 Previous employment

Oct. 2024 – Dec. 2024	**University of Tokyo** and **Keio University**, Japan visiting researcher on a Heisenberg fellowship, group of Prof. Atsushi Shiho
Oct. 2023 – Sept. 2024	**IMPAN**, Warszawa, Poland postdoc in the group of Prof. Piotr Achinger
Oct. 2020 – Sept. 2023	**Universität Regensburg**, Regensburg, Germany Akademische Rätin auf Zeit (postdoc), group of Prof. Niko Naumann
Aug. 2018 – Sept. 2020	**Universität Regensburg**, Regensburg, Germany Akademische Rätin auf Zeit (postdoc), group of Prof. Niko Naumann
Aug. 2017 – July 2018	**Keio University**, Yokohama, Japan KiPAS Arithmetic and Number Theory, JSPS postdoc, group of Prof. Kenichi Bannai
May 2016 – July 2017	**Universität Regensburg**, Regensburg, Germany Akademische Rätin auf Zeit (postdoc), group of Prof. Niko Naumann
Mar. 2014 – April 2016	**Universität Regensburg**, Regensburg, Germany postdoc in the DFG research training group **GRK 1692** "Curvature, cycles and cohomology", group of Prof. Niko Naumann

1.6 Research visits

December 2023	**Università degli Studi di Milano**, Milano, Italy project with Prof. Alberto Vezzani
May 2022 – June 2022	**Isaac Newton Institute**, Cambridge, UK Program "K-theory, algebraic cycles and motivic homotopy theory"
December 2022	**Université de Picardie Jules Verne**, Amiens, France project with MCF Ramla Abdellatif
March 2022	**Université de Picardie Jules Verne**, Amiens, France project with MCF Ramla Abdellatif
Febr. 2020 – Mar. 2020	**Isaac Newton Institute**, Cambridge, UK Program "K-theory, algebraic cycles and motivic homotopy theory"
Mar. 2019 – May 2019	**Keio University**, Yokohama, Japan group of Prof. Kenichi Bannai
Apr. 2017 – June 2017	**Keio University**, Yokohama, Japan KiPAS Arithmetic and Number Theory, group of Prof. K. Bannai
Apr. 2017	**Institut Mittag-Leffler**, Stockholm, Sweden Program "Algebro-Geometric and Homotopical Methods"
Oct. 2012 – Dec. 2012	**École Normale Supérieure**, Lyon, France group of Prof. Wiesława Nizioł

2 Academic career

2.1 Degrees

Universität Regensburg Regensburg, Germany, 2016 – 2021
Habilitation in Mathematics, facultas docendi
Thesis: "Constructions and Applications in p-adic Cohomology Theories"
Referees: Profes. Michel Gros, Martin Olsson

University of Utah Salt Lake City, USA, 2009 – 2014
PhD in Mathematics
Dissertation: "Overvonvergent Chern classes and higher cycle classes"
Advisor: Prof. Wiesława Nizioł
Jury: Profes. Wiesława Nizioł, Tomaso de Fernex, Yuan-Pin Lee, Gordon Savin, Paul Roberts

Ludwig–Maximilians Universität Munich, Germany, 2007 – 2010
Diploma in mathematics, minor: theoretical physics
Thesis: "Fermat's Last Theorem and the Modularity Theorem"
Advisor: Prof. Fabien Morel

Université Paris 13 (Nord) Villetaneuse, France, 2006 – 2007
Master 1 in mathematics
Thesis: "Les groupes p-divisibles"
Advisor: MCF Olivier Brinon

Ludwig–Maximilians Universität Munich, Germany, 2003 – 2006
Pre-diploma in mathematics, minor: theoretical physics

2.2 References

The following people (in alphabetic order) have written and are willing to write letters of recommendation on my behalf:

Kenichi Bannai Keio University, Department of Mathematics (Japan)
`bannai@math.keio.ac.jp`

Kiran S. Kedlaya University of California in San Diego, Department of Mathematics (USA)
`kedlaya@ucsd.edu`

Guido Kings Universität Regensburg, Fakultät für Mathematik (Germany)
guido.kings@mathematik.uni-regensburg.de

Luc Illusie Université Paris-Sud, Mathématique (France)
Luc.Illusie@math.u-psud.fr

Bernard Le Stum Institut de Recherche Mathématiques de Rennes (France)
bernard.le-stum@univ-rennes1.fr

Niko Naumann (Enseignement) Universität Regensburg, Fakultät für Mathematik, (Germany)
niko.naumann@mathematik.uni-regensburg.de

Wiesława K. Nizioł Sorbonne Université Paris IMJ-PRG (France)
wieslawa.niziol@imj-prg.fr

Atsushi Shiho University of Tokyo, Department of Mathematics (Japan)
shiho@ms.u-tokyo.ac.jp

Sarah Zerbes ETH Zürich, Department of Mathematics (Switzerland)
sarah.zerbes@math.ethz.ch

3 Research merits

3.1 Research area

I undertake research in arithmetic geometry, in particular I research p-adic cohomology theories and their applications. The techniques I use frequently come from Category Theory, Combinatorics, Commutative Algebra, Homotopy Theory, Derived Algebraic Geometry, Homological Algebra, Topology, just to name a few. Arithmetic Geometry is fascinating to me because it is so versatile, provides (more than) a starting point for interdisciplinary work, and the possibility to grow in different directions.

One of my mathematical dreams is to fully understand the relation between different tools that occur in the research of special values of p-adic L-functions, more precisely syntomic and motivic cohomology.

I am also interested in the study of integral p-adic cohomology theories, in particular in the construction of an integral p-adic cohomology theory for open varieties.

Key words: p-adic cohomology theories, syntomic cohomology, motivic cohomology, descent, derived geometry.

3.2 Publications

3.2.1 Peer-reviewed publications

[1] Ertl V., Gilles S. and Nizioł W.K.: **On the v-Picard group of Stein spaces**.
International Mathematics Research Notices, vol. 2024, no. 20, pp. 13352–13379, (2024).

[2] Ertl V.: **A new proof of a vanishing result due to Berthelot, Esnault, and Rülling**.
Journal of Number Theory, vol. 237, pp. 242–256, (2022).
DOI: 10.1016/j.jnt.2019.03.022

[3] Ertl V. and Yamada K.: **Comparison between rigid and crystalline syntomic cohomology for strictly semistable log schemes with boundary**.
Rendiconti del Seminario Matematico della Università di Padova, vol. 145, pp. 213–291, (2021).
DOI: 10.4171/rsmup/81

[4] Ertl V. and Shiho A.: **On infiniteness of integral overconvergent de Rham–Witt cohomology modulo torsion**.
Tohoku Mathematical Journal, vol. 72, no. 3, pp. 395–410, (2020).
DOI: 10.2748/tmj/1601085622

[5] Ertl V. and Miller L.E.: **Witt differentials in the h-topology**.
Journal of Pure and Applied Algebra, vol. 223, no. 12, pp. 5285–5309, (2019).
DOI: 10.1016/j.jpaa.2019.03.022

[6] Ertl V. and Nizioł W.K.: **Syntomic cohomology and p-adic motivic cohomology**.
Algebraic Geometry, vol. 6, no. 1, pp. 100–131, (2019).
DOI: 10.14231/ag-2019-006

[7] Ertl V. and Sprang J.: **Integral Comparison of Monsky–Washnitzer and overconvergent de Rham–Witt cohomology**.
Proceedings of the AMS, Series B, vol. 5, pp. 64–72, (2018).
DOI: 10.1090/bproc/38

[8] Ertl V.: **Full faithfulness for overconvergent F-de Rham–Witt connections**.
Comptes Rendus Mathématiques, vol. 354, no. 7, pp. 653–658, (2016). DOI: 10.1016/j.crma.2016.04.004

3.2.2 Preprints

[1] Ertl V.,and Vezzani A.: **Berthelot's conjecture via homotopy theory**.
Available at arXiv:2406.02182, (2024).

[3] Ertl V., Shiho A. and Sprang J.: **Integral p-adic cohomology theories for open and singular varieties**.
Available at arXiv:2105.11009, (2021).

[4] Ertl V. and Yamada K.: **Poincaré duality for rigid analytic Hyodo–Kato theory.**
Available at arXiv:2009.09160, (2020).

[5] Ertl V. and Yamada K.: **Rigid analytic reconstruction of Hyodo–Kato theory**.
Available at arXiv:1907.10964, (2019).

3.2.3 Other academic articles

[1] Ertl V.: **Witt differentials and the h-topology**.
Oberwolfach Report 6/2019, pp. 426–427.

[2] Ertl V.: **Comparison theorems between overconvergent and rigid cohomology with coefficients**.
Oberwolfach Report 32/2014, 1784–1786.

3.2.4 Dissertation

[1] Ertl V.: **Overconvergent Chern classes and higher cycle classes**.
Dissertation, University of Utah, College of Science, Department of Mathematics, 2014-05.

3.2.5 Habilitation

[1] Ertl V.: **Constructions and Applications in p-adic Cohomology Theories**.
Habilitation, Universität Regensburg, Fakultät für Mathematik, 2021-04.

3.3 Received funding and awards

Heisenberg Programm
Personal grant awarded by the DFG
Project:"Approaches to and applications of p-adic cohomology theories"
Accepted into the program: October 2023

Grant of the Bavarian-French University Centre
Research cooperation with Ramla Abdellatif, Université de Picardie Jules Verne (France)
Project: "The monodromy operator in prismatic cohomology"
Amount: 6235 €
January 2022 – December 2023

ARSP grant
Personal grant within the "Academic Research Sabbatical Program"
Awarded by the Universität Regensburg
Project: "Aspects of p-adic cohomologies"
Amount: 29400 €
April 2019 – September 2019

JSPS postdoctoral fellowship
Personal grant for research in Japan at Keio University
Selected by the Alexander von Humboldt Foundation
Project: "Logarithmic rigid cohomology theories"
Amount: 4744000 ¥
Host: Prof. K. Bannai
August 2017 – July 2018

DFG collaborative research center SFB 1085: "Higher Invariants – Interactions between Arithmetic Geometry and Global Analysis"
Collective grant within the Fakultät für Mathematik, Universität Regensburg
Awarded by the DFG
Role: PI for the third funding period
2022 – 2026

Scholarship for habilitation
Personal grant
Awarded by the Bavarian state
Project: "Research in p-adic cohomologies"
Amount: 13000 €
March 2017 – July 2017

Travel grant for female junior scientists
Personal grant
Awarded by the Bavarian state
Project: "Research in p-adic cohomologies"
Amount: 3306 €
May 2017 – July 2017

DFG research training group GRK 1692: "Curvature, Cycles, and Cohomology"
Collective grant within the Fakultät für Mathematik, Universität Regensburg
Awarded by the DFG
Role: member, associate
2014 – 2019

ERASMUS-scholarship Academic year (Master 1) in France
Amount: 3600 €
September 2006 – August 2007

3.4 Research talks

3.4.1 Research talks at conferences

April 2024]
France–Japan Arithmetic Workshop, Tokyo (Japan)
Talk: TBD

March 2024
Conference "Non-Archimedean Geometry, Birational Geometry and Resolution of Singularities", Caen (France)
Talk: TBD

December 2024
The 20^{th} Hokuriku Number Theory Workshop, Kanazawa (Japan)
Talk: **Conjectures on L-functions for Varieties Over Function Fields and Their Relations**

October 2024
Conference on the occasion of Nobuo Tsuzuki's 60th birthday "p-adic cohomology and arithmetic geometry ", Sendai (Japan)
Talk: **The v-Picard group of Stein spaces**

July 2024
Conference "Algebraic K-Theory and Arithmetic", Będlewo (Poland)
Talk: **Higher pushforwards in rigid cohomology via motives**

October 2023
A Conference in Arithmetic Algebraic Geometry in Memory of Jan Nekovář, IHES, Bures-sur-Yvette (France)
Talk: **Conjectures on L-functions for varieties over function fields and their relations**

September 2022
Conference in honour of Bruno Chiarellotto "Around p-adic Cohomologies", Padova (Italy)
Talk: **Poincaré duality in log rigid cohomology**

May 2022
BIRS-CMO Workshop "Advances in Mixed Characteristic Commutative Algebra & Geometric Connections", Casa Matemática Oaxaca (Mexico)
Talk: **Integral p-adic cohomology for open and singular varieties**

December 2020
Conference "Tropical Geometry, Berkovich Spaces, Arithmetic D-Modules and p-adic Local Systems", Imperial College London (UK)
Talk: **Poincaré duality for rigid Hyodo–Kato theory**

September 2019
Conference in honour of Bernard Le Stum "Over and around sites in characteristic p", Padova (Italy)
Talk: **A rigid analytic approach to Hyodo–Kato theory**

May 2019
London–Paris Number Theory Seminar, Kings College London (UK)
Talk: **Crystalline and rigid syntomic cohomology for strictly semistable schemes**

February 2019
Oberwolfach Workshop "Singularities and Homological Aspects of Commutative Algebra", Oberwolfach (Germany)
Talk: **Witt differentials and the h-topology**

November 2018
Oberwolfach Seminar "Syntomic Cohomology and p-adic Hodge Theory", Oberwolfach (Germany)
Talk: **The rigid Hyodo–Kato morphism**

July 2018
Sendai–Hiroshima Number Theory Conference, Sendai (Japan)
Talk: **A vanishing result due to Berthelot, Esnault, and Rülling**

April 2018
Arkansas Spring Lecture Series, "Old and New themes in p-adic Cohomology", Fayetteville (USA)
Talk: **Crystalline and rigid syntomic cohomology for strictly semistable schemes**

February 2018
Project Research Conference in Hakone, Hakone (Japan)
Talk: **A vanishing result due to Berthelot, Esnault, and Rülling**

November 2017
Conference "Algebraic Geometry with Fancy Coefficients", Caen (France)
Talk: **Syntomic cohomology and p-adic motivic cohomology**

October 2017
BIRS Workshop "p-adic Cohomology and Arithmetic Appliations", Banff (Canada)
Talk: **Integral Monsky–Washnitzer and overconvergent de Rham–Witt cohomology**

May 2017
Workshop on Arithmetic Geometry, Hakodate (Japan)
Talk: **Integral Monsky–Washnitzer and overconvergent de Rham–Witt cohomology**

September 2016
Conference "Differential forms in algebraic geometry", Freiburg (Germany)
Talk: **Witt differentials and the h-topology**

September 2015
Workshop "p-adic Hodge theory and Iwasawa theory", Bielefeld (Germany)
Talk: **Rigid and arithmetic syntomic cohomology**

July 2014
Oberwolfach Arbeitstagung "Algebraic Number Theory", Oberwolfach (Germany)
Talk: **Overconvergent de Rham–Witt connections**

3.4.2 Research talks in seminars

January 2025
University of Franche-Comté, Number Theory Seminar, Besançon (France)
Talk: TBD

November 2024
Science Tokyo, Number Theory Seminar, Tokyo (Japan)
Talk: **The v-Picard group of Stein spaces**

February 2024
Université de Caen Normandie, Number Theory Seminar, Caen (France)
Talk: **Conjetures sur les fonctions L sur les corps de fonctions**

January 2024
University of Warwick, Number Theory Seminar, Coventry (UK)
Talk: **Conjectures on L-functions for varieties over function fields and their relations**

January 2024
Universität Münster, Number Theory Seminar, Münster (Germany)
Talk: **Conjectures on L-functions for varieties over function fields and their relations**

December 2023
Università degli Studi di Milano, Arithmetic Geometry Seminar, Milano (Italy)
Talk: **Conjectures on L-functions for varieties over function fields and their relations**

November 2023
IMPAN Algebraic Geometry Seminar (impanga), Warszawa (Poland)
Talk: **Conjectures on L-functions for varieties over function fields and their relations**

March 2023
Université de Bordeaux, Number Theory Seminar, Bordeaux (France)
Talk: **Constructions rigides en théorie de Hodge p-adique**

January 2023
Universität Heidelberg, GAUS-Seminar, Heidelberg (Germany)
Talk: **Integral p-adic cohomology for open and singular varieties**

December 2022
Université de Picardie Jules Verne, Number Theory Seminar, Amiens (France)
Talk: **Constructions rigides pour la cohomologie de Hyodo-Kato**

March 2022
Université de Caen Normandie, Number Theory Seminar, Caen (France)
Talk: **Le noyaux de la monodromie en cohomologie p-adique – une approche rigide analytique**

March 2022
Université de Strasbourg, Arithmetic Geometry seminar, Strasbourg (France)
Talk: **Integral p-adic cohomology for open and singular varieties**

February 2022
Universität Wuppertal, Algebra Oberseminar, Wuppertal (Germany)
Talk: **Integral p-adic cohomology for open and singular varieties**

October 2021
Université Rennes 1, Arithmetic Geometry Seminar, Rennes (France)
Talk: **The kernel of the monodromy in p-adic cohomology - a rigid analytic approach**

March 2021
Université de Caen, Number Theory Seminar, Caen (France)
Talk: **Constructions rigides pour la cohomologie de Hyodo-Kato**

February 2020
Isaac Newton Institute, seminar of the program "K-theory, algebraic cycles and motivic homotopy theory", Cambridge (UK)
Talk: **A rigid analytic approach to Hyodo–Kato theory**

July 2018
Keio University, Algebra Seminar, Yokohama (Japan)
Talk: **A vanishing result due to Berthelot, Esnault, and Rülling**

November 2017
Sophia University, colloque du Départment de Mathématiques, Tokyo (Japan)
Talk: **Logarithmic and non-logarithmic p-adic cohomology theories**

May 2017
Keio University, Algebra Seminar, Yokohama (Japan)
Talk: **Syntomic cohomology and p-adic motivic cohomology**

November 2014
Albert–Ludwigs Universität Freiburg, Algebra Seminar, Freiburg (Germany)
Talk: **Overconvergent de Rham–Witt connections**

October 2014
Universität Regensburg, colloquium GRK 1692 "Curvature, Cycles, and Cohomology", Regensburg (Germany)
Talk: **Overconvergent de Rham–Witt connections**

October 2014
Universität Bielefeld, Number Theory Seminar, Bielefeld (Germany)
Talk: **Overconvergent de Rham–Witt connections**

January 2014
Universität Regensburg, Number Theory Seminar, Regensbrug (Germany)
Talk: **Overconvergent Chern classes**

January 2014
Universität Regensburg, colloquium GRK 1692 "Curvature, Cycles, and Cohomology", Regensburg (Germany)
Talk: **Overconvergent de Rham–Witt complex and applications**

January 2014
Humboldt Universität Berlin, Number Theory Seminar, Berlin (Germany)
Talk: **Overconvergent Chern classes**

January 2014
California Institute of Technology, Number Theory Seminar, Pasadena (USA)
Talk: **Overconvergent Chern classes**

May 2013
UC San Diego, Number Theory Seminar, La Jolla (USA)
Talk: **Overconvergent Chern classes**

3.5 Poster presentations

January 2018
UK-Japan Winter School "Galois representations and automorphic forms", King's College London (United Kingdom)
Poster presentation: **Syntomic and motivic cohomology**

February 2017
Third Meeting for Young Women in Mathematics "Cohomological Methods in Geometry", Albert-Ludwigs-Universität Freiburg (Germany)
Poster presentation: **Witt differentials and the h-topology**

May 2015
Second Meeting for Young Women in Mathematics "Cohomological Methods in Geometry", Albert-Ludwigs-Universität Freiburg (Germany)
Poster presentation: **Overconvergent F-connections**

June 2014
Evaluation of the DFG research training group GRK 1692 "Curvature, Cycles, and Cohomology", Universität Regensburg, Regensburg (Germany)
Poster presentation: **Overconvergent F-connections**

4 Pedagogical merits

4.1 Teaching profile

Throughout my career, I had the opportunity to teach in different settings and mentor students at different points of their career. In my previous position as "Akademische Rätin auf Zeit", I tought 5 hours per week, which corresponds to 145 hours per year.

As a graduate student instructor at the University of Utah, I taught mostly undergraduate classes for students whose major was outside of mathematics. At the Universität Regensburg, I had the opportunity to teach classes on all levels, undergraduate and graduate.

This includes service lectures, such as Analysis for Physicists, or a class that prepares future secondary school teachers for the state exam in Algebra.

In Utah as well as in Regensburg I organised seminars: undergraduate seminars, where I had to guide students and teach them how to acquire knowledge and how to present a talk, but also graduate seminars and research seminars.

As a former international student and researcher in the US, France, Poland and Japan, it is particularly important for me that international students and colleagues feel welcomed and are integrated into the community.

4.2 Teaching experience

4.2.1 University lectures

Mathematics in economic and social administration
Université de Caen, second semester 2024/25
Language: French
Level: Bachelor
Number of participants: 247
hours per week: 4

Locic and reasoning
Université de Caen, second semester 2024/25
Language: French
Level: Bachelor
Number of participants: 43
hours per week: 2

Preparation class for the Algebra exam for secondary school teachers
Universität Regensburg, summer term 2023
Language: German
Level: Master equivalent
Number of participants: 33
Hours per week: 6

Elementary Geometry for middle school teachers
Universität Regensburg, winter term 2022/23
Language: German
Level: Bachelor equivalent
Number of participants: 54
Hours per week: 6

Assistant for Dr. Strunk's preparation class for the Algebra exam
Universität Regensburg, summer term 2022
Language: German
Level: Master equivalent
Number of participants: 43
Hours per week: 3

Assistant for Dr. Bowden's preparation class for the Analysis exam
Universität Regensburg, summer term 2022
Language: German
Level: Master equivalent
Number of participants: 43
Hours per week: 2

Preparation class for the Algebra exam for secondary school teachers
Universität Regensburg, winter term 2021/22
Language: German
Level: Master equivalent
Number of participants: 45
Hours per week: 6

Assistant for Dr. Ludewig's class "Analysis for physics"
Universität Regensburg, winter term 2021/22
Language: German
Level: Bachelor
Number of participants: 30
Hours per week: 2

Assistant for Prof. Naumann's class "Linear Algebra 1"
Universität Regensburg, winter term 2020/21
Language: German
Level: Bachelor
Number of participants: 250
Hours per week: 4

Algebraic groups
Universität Regensburg, summer term 2020
Language: English/German
Level: Master
Number of participants: 4
Hours per week: 4

Analysis for physics
Universität Regensburg, winter term 2019/20
Language: German
Level: Bachelor
Number of participants: 35
Hours per week: 6

Preparation class for the Algebra exam for secondary school teachers
Universität Regensburg, winter term 2018/19
Language: German
Level: Master equivalent
Number of participants: 40
Hours per week: 6

Exercise session for Prof. Naumann's class "Algebra"
Universität Regensburg, winter term 2016/17
Language: German
Level: Bachelor
Number of participants: 45
Hours per week: 2

Preparation class for the Algebra exam for secondary school teachers
Universität Regensburg, winter term 2016/17
Language: German
Level: Master equivalent
Number of participants: 40
Hours per week: 4

Assistant for Prof. Naumann's class "Linear Algebra 2"
Universität Regensburg, summer term 2016
Language: German
Level: Bachelor
Number of participants: 150
Hours per week: 4

Preparation class for the Algebra exam for secondary school teachers
Universität Regensburg, summer term 2016
Language: German

Level: Master equivalent
Number of participants: 40
Hours per week: 6

Lectures on the de Rham–Witt complex
Universität Regensburg, winter 2015/16
Language: English
Level: PhD students
Number of participants: 4
Hours per week: 4

Teaching assistant for Prof. van Opstall's class "Math 1010: Intermediate Algebra"
University of Utah, spring term 2014
Language: English
Level: Bachelor
Number of participants: 100
Hours per week: 4

Math 1210: Calculus I
University of Utah, fall term 2013
Language: English
Level: Bachelor
Number of participants: 24
Hours per week: 4

Math 1100: Quantitative Analysis
University of Utah, spring term 2011
Language: English
Level: Bachelor
Number of participants: 18
Hours per week: 4

Math 1030: Introduction to Quantitative Reasoning
University of Utah , fall term 2010
Language: English
Level: Bachelor
Number of participants: 22
Hours per week: 4

Teaching Assistant for Prof. de Fernex' class "Math 3210: Foundations of Analysis I"
University of Utah, spring term 2010
Language: English
Level: Bachelor
Number of participants: 30
Hours per week: 2

Teaching Assistant for Prof. Lodh's class "Math 3220: Foundations of Analysis II"
University of Utah, spring term 2010
Language: English
Level: Bachelor
Number of participants: 30
Hours per week: 2

Teaching Assistant for Prof. Schmitt's class "Math 3210: Foundations of Analysis I"
University of Utah, fall term 2009
Language: English
Level: Bachelor
Number of participants: 30
Hours per week: 2

Teaching Assistant for Prof. Treiberg's class "Math 3220: Foundations of Analysis II"
University of Utah, fall term 2009
Language: English
Level: Bachelor
Number of participants: 30
Hours per week: 2

Exercise session for Prof. Morel's class "Algebra II"
Ludwig–Maximilians Universität München, summer term 2009
Language: German
Level: Bachelor
Number of participants: 15
Hours per week: 2

Exercise session for Prof. Morel's class "Algebra I"
Ludwig–Maximilians Universität München, winter term 2008/09
Language: German
Level: Bachelor
Number of participants: 15
Hours per week: 2

Exercise session for Prof. Morel's class "Linear Algebra II"l
Ludwig–Maximilians Universität München, summer term 2008
Language: German
Level: Bachelor
Number of participants: 15
Hours per week: 2

Exercise session for Prof. Morel's class "Linear Algebra I"
Ludwig–Maximilians Universität München, winter term 2007/08
Language: German
Level: Bachelor
Number of participants: 15
Hours per week: 2

4.2.2 Mini courses

An introduction to p-adic Hodge theory
University of Warsaw, Algebraic Geometry Seminar, Warszawa (Poland)
Two-part lecture series, November 2023
Language: English
Level: PhD-students, post-docs
Number of participants: 20

Different syntomic cohomology theories
Sophia University, Tokyo (Japan)
Lecture and discussion day, June 2017
Language: English
Level: post-docs
Number of participants: 3

The de Rham–Witt complex
Albert-Ludwigs-Universität Freiburg (Germany)
Three-day lecture series, January 2015
Language: German
Level: PhD students, post-docs
Number of participants: 15

4.2.3 Student seminars

Mathemagika: mathematics and magic
Universität Regensburg, summer term 2021
Language: German
Level: Bachelor
Number of participants: 12

Crystallographic groups
Universität Regensburg, summer term 2016
Language: German
Level: Bachelor
Number of participants: 13

Finite flat group schemes
Universität Regensburg, summer term 2014
Language: German
Level: Bachelor
Number of participants: 3

4.3 Supervision

Research interships
2021, François Trinh : "p-divisible gropus"
2021, Zhenghui Li : "The Weil conjecture – Deligne's proof"

Bachelor theses
2020 – 2021, Joshua Lappat : "Lie algebras and the universal envelopping algebra"
2020 – 2021, Lukas Wolfseher : "Abelian categories and $\mathfrak{G}$-modules"

PhD theses
2022 – ... Andrea Panontin, cosupervised with Prof. Moritz Kerz

4.4 Pedagogical material

My teaching material can be found on my teaching web site. Most of the courses that I taught at the Universität Regensburg are in German.

A few highlights are the following:

- Lecture notes for **Elementary geometry**, including a study guide
- Lecture notes for **Algebraic groups**, taught as an inquiry based learning course
- Lecture notes for **Algebra**
- Lecture notes for **Lectures on the de Rham–Witt complex**
- Development of a concept to prepare future secondary school teachers for the state exam including additional learning material

4.5 Theoretical knowledge

I completed the following pedagogical classes

- **Personal Impression – intensive workshop**
  Universität Regensburg/ Carpe Verba, February 2016
- **Instructor Training Workshop for International Graduate Students**
  University of Utah, August 2009
- **Instructor Training Workshop for Mathematics**
  University of Utah, August 2009

5 Administration, service, organisation

5.1 Organisation of hot topic seminars

Summer term 2023
Universität Regensburg, Regensburg (Germany)
Oberseminar **A new construction of the de Rham–Witt complex after Bhatt–Lurie–Mathew**
with M. Kerz

Winter term 2016/17
Universität Regensburg, Regensburg (Germany)
Higher Invariants Oberseminar **Algebraic de Rham cohomology**
with F. Strunk et G. Tamme

Summer term 2015
Universität Regensburg, Regensburg (Germany)
Oberseminar **Weil's conjecture on Tamagawa numbers**

Winter term 2014/15
Universität Regensburg, Regensburg (Germany)
Oberseminar **Non-archimedean geometry**

Spring term 2013
University of Utah, Salt Lake City (USA)
Seminar **p-adic Deformation of algebraic cycle classes**

Fall term 2012
University of Utah, Salt Lake City (USA)
Seminar **Étale cohomology**
with L. E. Miller

Spring 2010
University of Utah, Salt Lake City (USA)
Seminar **The theorem of Čerednik and Drinfeld**
with R. Lodh

5.2 Assignments as reviewer

- Journal of Number Theory
- Proceedings of the London Mathematical Society
- Nagoya Mathematical Journal
- Proceedings volumes of the Simons Symposia
- Mémoirs of the AMS
- Compositio Mathematica
- Bulletin de la Société Mathématique de France
- Algebra & Number Theory
- International Mathematics Research Notices
- Journal of the Association for Mathematical Research

5.3 Outreach/mentoring

- Discussion group for gifted female students in mathematics `https://ertlvroni.github.io/Outreach/talent.htm`
  April 2020 – September 2023
- Information workshop for master students `https://ertlvroni.github.io/Outreach/infodiss.htm`
  December 2020 – January 2021
- Open day for secondary school students, November 2014, (Universität Regensburg)
- Contributions to `http://www.suri-joshi.jp/` a resource for girls in mathematics: 1, 2, 3

5.4 Administration

- Representative for the junior members of the department in the **faculty council**
  October 2021 – September 2022
- Representative for the junior members of the department in the **hiring committee** for a W3 professorship
  October 2021 – June 2022
- PI in the DFG collaborative research centre **SFB 1085 "Higher Invariants"**
  December 2022 – November 2026
- Note taker for oral exams
  May 2016 – September 2023
- Organisation and coordination of the oral mathematics exams for physics students
  winter 2019/20, winter 2021/22
- Responsible for the online material for Prof. N. Naumann's class "Linear Algebra 1"
  winter 2020/21