Curriculum vitae et studiorum

Veronika Ertl-Bleimhofer

Contact details
Instytut Matematyczny Polskiej Akademii Nauk
ul. Śniadeckich 8
00-656 Warszawa
Poland

Email
vertl@impan.pl

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

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1 Basic information

1.1 Personal details

VERONIKA ERTL-BLEIMHOFER
Schleißheimer Straße 80
80797 München, Germany
Tel.: (+49) 89-80997170

1.2 Work place address, telephone number and email address

Instytut Matematyczny Polskiej Akademii Nauk
ul. Śniadeckich 8
00-656 Warszawa
Poland
Email: vertl@impan.pl

1.3 Languages

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

1.4 Current employment

Oct. 2023 – present	**IMPAN**, Warszawa, Poland
	postdoc in the group of Prof. P. Achinger

1.5 Previous employment

Oct. 2020 – Sept. 2023	**Universität Regensburg**, Regensburg, Germany
	Akademische Rätin auf Zeit (postdoc), group of Prof. N. Naumann
Aug. 2018 – Sept. 2020	**Universität Regensburg**, Regensburg, Germany
	Akademische Rätin auf Zeit (postdoc), group of Prof. N. Naumann
Aug. 2017 – July 2018	**Keio University**, Yokohama, Japan
	KiPAS Arithmetic and Number Theory, JSPS postdo, group of Prof. K. Bannai
May 2016 – July 2017	**Universität Regensburg**, Regensburg, Germany
	Akademische Rätin auf Zeit (postdoc), group of Prof. N. 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. N. Naumann

1.6 Research visits

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 R. Abdellatif
March 2022	**Université de Picardie Jules Verne**, Amiens, France
	project with MCF R. 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. 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. M. Gros, M. Olsson

University of Utah Salt Lake City, USA, 2009 – 2014
> PhD in Mathematics
> Dissertation: "Overvonvergent Chern classes and higher cycle classes"
> Advisor: Prof. W. Nizioł
> Jury: Profes. W. Nizioł, T. de Fernex, Y.-P. Lee, G. Savin, P. Roberts

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

Université Paris 13 (Nord) Villetaneuse, France, 2006 – 2007
> Master 1 in mathematics
> Thesis: "Les groupes p-divisibles"
> Advisor: O. 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 (teaching) 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.: **A new proof of a vanishing result due to Berthelot, Esnault, and Rülling**.
Journal of Number Theory, vol. 237, pp. 242–256, (2022).

[2] ERTL V. ET 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).

[3] ERTL V. ET SHIHO A.: **On infiniteness of integral overconvergent de Rham–Witt cohomology modulo torsion**.
Tohoku Mathematical Journal, vol. 72, no. 3, pp. 395–410, (2020).

[4] ERTL V. ET MILLER L.E.: **Witt differentials in the h-topology**.
Journal of Pure and Applied Algebra, vol. 223, no. 12, pp. 5285–5309, (2019).

[5] ERTL V. ET NIZIOŁ W.K.: **Syntomic cohomology and p-adic motivic cohomology**.
Algebraic Geometry, vol. 6, no. 1, pp. 100–131, (2019).

[6] ERTL V. ET 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).

[7] ERTL V.: **Full faithfulness for overconvergent F-de Rham–Witt connections**.
Comptes Rendus Mathématiques, vol. 354, no. 7, pp. 653–658, (2016).

3.2.2 Preprints

[1] ERTL V., SHIHO A. ET SPRANG J.: **Integral p-adic cohomology theories for open and singular varieties**.
Available at arXiv:2105.11009, (2021).

[2] ERTL V. ET YAMADA K.: **Poincaré duality for rigid analytic Hyodo–Kato theory.**
Available at arXiv:2009.09160, (2020).

[3] ERTL V. ET 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, DOI: 10.4171/OWR/2019/6.

[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

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
    2010 – 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

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 2024

Universität Münster, Number Theory Seminar, Münster (Germany)
Talk: TBD

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: **Des théorèmes de comparaison classiques et p-adiques**

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 (UK)

Poster presentation: **Syntomic and motivic cohomology**

February 2017

Third Meeting for Young Women in Mathematics "Cohomological Methods in Geometry", Freiburg (Germany)

Poster presentation: **Witt differentials and the h-topology**

May 2015

Second Meeting for Young Women in Mathematics "Cohomological Methods in Geometry", 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 present position as "Akademische Rätin auf Zeit", I teach 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 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

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

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

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

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

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

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

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

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

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: 4

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

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

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

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

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

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

Classical and p-adic comparison theorems
University of Warsaw, Algebraic Geometry Seminar, Warszawa (Poland)
Lecture series, November 2023
Language: English
Level: PhD students, post-docs
Number of participants: 15

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 internships
>   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 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 **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

5.3 Outreach/mentoring

- Discussion group for gifted female students in mathematics `https://homepages.uni-regensburg.de/~erv10962/Outreach/talent.htm`
  April 2020 – September 2023

- Information workshop for master students `https://homepages.uni-regensburg.de/~erv10962/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 Japanese resource for girls in mathematics. Articles: 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