

# Gunther Cornelissen • curriculum vitæ • March 3, 2018

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Born July 4th, 1971 — Gent (Belgium)  
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## Current position

*Professor of mathematics*  
Chair holder in Geometry and Number Theory  
Universiteit Utrecht, The Netherlands

## Areas of specialization

Number theory | Arithmetic & algebraic geometry  
Noncommutative Geometry | Logic | Mathematical physics

## Appointments held (↑)

2015-2017 Universiteit Utrecht, Head of Department of Mathematics  
(Mathematical Institute & Science Education Institute)  
2014 University of Warwick (UK); visiting professor (1.5 months)  
Caltech (USA); visiting professor (1.5 months)  
2012- Universiteit Utrecht, full professor; Core Chair “Geometry and Number Theory”  
2007-2012 Universiteit Utrecht; full professor; Profile Chair “The interaction between mathematical  
physics and arithmetic geometry”  
2001-2007 Universiteit Utrecht; lecturer; ’03/’05 part-time parental leave  
2001 Katholieke Universiteit Leuven (Belgium); part-time visiting professor  
1997-2001 Max-Planck-Institut für Mathematik (Bonn, Germany); researcher  
1996 Universität des Saarlandes (Saarbrücken, Germany); one month research assistant  
1993-2001 FWO (Flemish National Science Foundation, Belgium); pre-/post-doctoral researcher  
1993-1997 Universiteit Gent (Belgium); research and teaching assistant

## Grants, honours, named lectures & awards (↑)

2017 Utrecht Faculty of Science Westerdijk Award (for creating a more diverse organisation)  
2017 Morning speaker, 69<sup>th</sup> *British Mathematical Colloquium*, Durham  
2014 Invited research professor, *Trimestre on noncommutative geometry*, Hausdorff Institute (Bonn)  
2012 Elected member of the *Royal Holland Society of Sciences and Humanities* (KHMW)  
2012 Twenty-first annual *Charles R. DePrima* memorial lecturer, Caltech  
2011 Elected *Arbeitstagung* speaker, Bonn  
2009 Speaker at *Joint New York Number Theory Seminar* (Columbia/CUNY/NYU)  
2009 Invited researcher, *Hausdorff Institute* (Bonn), *Trimestre on diophantine equations* (declined)  
2008 NWO personal 5-year senior innovational research grant (VICI) (€ 1,250,000)

*From arithmetic geometry to noncommutative Riemannian geometry, and back*

- 2007 Invited speaker at the *Clay Mathematical Institute* (Boston)
- 2004 Berkeley/MSRI semester-long visiting professorship (declined)
- 2004 NWO personal 5-year mid-career innovational research grant (VIDI) (€ 600,000)  
*Non-archimedean geometry and automorphic forms*
- 2002;07 Nominated best junior teacher at Universiteit Utrecht by mathematics student union
- 1997– Max-Planck-Gesellschaft one year research scholarship (repeatedly offered)
- 1993–2001 FWO pre- and postdoctoral research scholarship (full salary & benefits)

**collaborative grants**

- 2017–2021 Computer Science department research collaboration grant; one PhD student (with Bodlaender; € 200,000)
- 2015–2021 Principal applicant of NWO Graduate School “Utrecht Geometry Centre”; 4 PhD students (€ 850,000)
- 2009–2014 ESF network “Interactions between low-dimensional topology and physics” (director J.E. Andersen; approx. € 600,000)
- 2007–2008 Two Dutch-French NWO Van Gogh exchange grants with Paris (with Mézard; € 9,600)
- 1997–2001 Co-principal investigator on FWO-project Algebraic Geometry (€ 11,500)

**other grants**

- 2018 Visiting Professorship, UU Complex Systems Focus Area, for Matilde Marcolli (€ 2100)
- 2017 Marie-Curie grant for Ana Ros Camacho (€ 166,000; proposal written by Ros Camacho)
- 2015 Marie-Curie grant for Martijn Caspers (€ 166,000; proposal written by Caspers)
- 2012 GQT-cluster PhD position grant (€ 170,000)
- 2009 Marie-Curie grant for Jonathan Reynolds (€ 120,000; proposal written by Reynolds)
- 2009 Partial funding for PhD position from University Focus Area Grant “Foundations of Natural Sciences” (approx. € 100,000)
- 2004– Grants for various workshops from NWO, Research schools, Research clusters, Foundation Compositio, Monna Fund and ESF (approx. € 50,000)
- 2002 NWO visitor grant for F. Kato (Kyoto) (€ 1,000)
- 1997 Travel grant from Wuytack Fund (€ 1,500)

**Education (↑)**

- 1993–1997 PhD in mathematics, Universiteit Gent, Belgium  
Supervisors: Jan Van Geel (Gent) and Ernst-Ulrich Gekeler (Saarbrücken)
- 1989–1993 Masters (“Licentiaat”) in pure mathematics, Universiteit Gent, summa cum laude  
Supervisors: Jan Van Geel (Gent) and Juliusz Brzezinski (Göteborg)
- 1993 One semester Erasmus exchange student at Chalmers Högskola (Göteborg)
- 1983–1989 High school diploma at Sint-Lievencollege Gent (main subjects: Latin/mathematics)

**Qualifications (↑)**

- 2016 Administrative academic leadership track, Universiteit Utrecht (Erwin Vermeulen)
- 2016 Programme “Managing expectations in professionals”, Wheel of Change (Elmira Nijhuis)
- 2015 Training “Gender awareness”, Direction (Esther Mollema)
- 2008 Training “Assessment and development interviews”, Universiteit Utrecht (Juditha Melssen; Teun van Aken)

- 2008 Senior qualification in university education (SKOw), Universiteit Utrecht
- 2008 Senior qualification in research (SKOz), Universiteit Utrecht
- 2002 Basic university education qualification (BKOW), Universiteit Utrecht
- 1992–1996 Certificate of Swedish language (Hogeschool Gent)
- 1993 (Legal) degree in high school teaching, Universiteit Gent, magna cum laude

## Invitations (↑)

### Recent scientific invitations

- 2018 Workshop *Modular forms and automorphic functions for function fields*, CRM SNS Pisa  
North British Functional Analysis Seminar (14 universities), Newcastle-upon-Tyne  
Colloquium, Groningen  
Algebra, geometry and number theory seminar, Leiden
- 2017 Colloquium, Münster  
Journées Arithmétiques, Caen (contributed talk)  
British Mathematical Colloquium, Durham  
Quantum Gravity Seminar, Nijmegen
- 2016 *XIV Karlsruher Weihnachtsworkshop zur Geometrie und Zahlentheorie*, KIT Karlsruhe  
Mathematical Colloquium, Université de Luxembourg  
Oberseminar Algebra, Universität Ulm  
Workshop *Ergodic Theory & Number Theory*, Göteborg  
Colloquium (E.-U. Gekeler's retirement), Saarbrücken  
Summer School & Conference *Noncommutative Geometry*, Villa de Leyva (5 lectures)  
Conference *Arithmétique en plat pays*, Mons  
Ergodic Theory & Dynamical Systems Seminar, Kraków  
Noncommutative Geometry Seminar, Polish Academy of Sciences, Warszawa  
Conference *Gauge Theory and Noncommutative Geometry*, Nijmegen (no talk)  
Mini-workshop *Operator Spaces and Noncommutative Geometry in Interaction*, Oberwolfach
- 2015 Leibniz Universität Hannover  
International Conference in Number Theory and Physics, Rio de Janeiro  
Colloquium, Utrecht  
Colloquium, Groningen
- 2014 Number Theory Seminar, Max-Planck-Institut, Bonn  
Workshop *Number theory and non-commutative geometry*, Bonn  
Noncommutative Geometry Programme, Hausdorff Institute, Bonn  
Workshop *K-homology and graph  $C^*$ -algebras*, ICTP Trieste  
One Day Meeting: *Noncommutative geometry, number theory and dynamics*, Warwick  
Mathematics Colloquium, University of Warwick  
Workshop *Specialization of linear series for algebraic and tropical curves*, Banff  
Colloquium, Florida State University  
Algebra Seminar, UCLA  
Noncommutative geometry seminar, Caltech  
Colloquium, UC San Diego  
Number Theory Seminar, UC San Diego  
Number Theory Seminar, Caltech
- 2013 *Oberseminar Algebraische Geometrie*, Universität Hannover  
*Oberseminar Algebraische Geometrie*, Universität Zürich

Workshop *Operator algebras and dynamical systems from number theory*, Banff  
 Workshop *Noncommutative Geometry*, Oberwolfach (no talk)  
 Number Theory and Physics *Oberseminar*, Bonn/Köln  
 Number Theory Seminar, Warwick  
 Ergodic Theory and Dynamical Systems Seminar, Warwick  
*Colóquio de Geometria e Aritmética*, IMPA, Rio de Janeiro  
 $C^*$ -seminar, Oslo  
 Colloquium, Saarbrücken

**Some earlier invitations (C=Colloquium; Conf=Conference) at**

AIM Palo Alto (Conf), Amsterdam VU (C), Barcelona (Conf), Benasque (Conf), Bonn (Conf), Brussels, Caen, Caltech, Clay Institute Boston (Conf), Crete, CUNY, Dagstuhl (Conf), UC Dublin, Eindhoven (C), Erlangen (C), Essen, ETH Zürich, Gent, Göteborg, Göttingen (C), Groningen (C), Ohio State (Conf), Hiroshima (Conf), Hokkaido, Kassel, Kinosaki (Conf), Köln, Kyoto, Leiden (C), Leuven, London, MPIM Bonn, Münster (Conf), Nijmegen (C+Conf), Oberflockenbach (Conf), Oberwolfach, Osaka, Oxford (Conf), Stanford, UCLA (C), UPenn, Utrecht (C), Toulouse, Vanderbilt (Conf), Versailles (Conf)

**Educational talks & outreach & media**

— at Utrecht unless indicated; NWD = ‘Nationale wiskundedagen’, Noordwijkerhout (Math teacher postgraduate event, 700 participants); VVW = ‘Vierkant voor Wiskunde’ (Math summer camp for high school students); Ouderdag = lectures for parents of mathematics students

- 2018 “U-talent” lecture for high school students
- 2017 Interviewed for Faculty Intranet and Student Society “Vakidoot” about diversity
- 2017 *Doing a PhD (or not)*, As<sup>2</sup> (Student society) Career Days
- ‘Meet the Professor’ on *Shape reconstruction* for elementary school children
- Webinar Masters Mathematics (video presentation for prospective students)
- Emmy Noether and symmetry*, NWD
- 2016 Interviewing Gerard ’t Hooft at Masters Introduction Graduate School of Natural Sciences
- Talk at FysiCie (Utrecht Physics Students society) on *Isospectrality*
- 2015 *Graphs and matrices*, VVW
- 2014 Interviewed about Gender policy by  $\beta$ -inspired
- Euler or Excel: how computers and calculators changed number theory*, NWD
- 2013 Internationalisation@Home panel, Universiteit Gent
- Three “U-talent” lectures for high school students
- Junior college module (high school students): *The Riemann hypothesis* (with Andringa)
- Two-day masterclass on *Diophantine equations* for high school students
- 2012 Marie Curie Colloquium (Nijmegen Physics Student Union): *One hundred years of drumming*
- Opening lecture Dutch university mathematical olympiad: *Meeting donuts*
- 2011 Work with Marcolli discussed in Marcus Y. Woo, *Unexpected connections*, in: *Engineering and Science* (Winter 2011) pp. 26–31.
- National PhD student research afternoon, Utrecht: *The work of Milnor on isospectrality*
- 2010 Interviewed (with Klaas Landsman) for N.W.O.-brochure *Mathematics clusters*, “Geometry and Quantum Theory”-theme.
- Klein’s Erlangen programme*, NWD
- 2009 “Listening” to shapes, NWD
- Mathematics and Passion, Gent: *Solve, or I will shoot...*; preceded by the play “Evariste” by

- theater group NUNC  
*Things you will never be able to do* (Undecidable problems), Ouderdag
- 2008– Visited various high schools with a project on diophantine equations  
 Organized project afternoons on number theory for high school students
- 2008 Lustrum lecture for student union “de Leidsche Flesch”  
 Teacher post-graduate education at “ $\beta$  onder de Dom”; Lorentz Center  
*Wonders of mathematical cooking* (Banach-Tarski paradox), Ouderdag  
 Consulted for *Int. J. Radiation Oncology Biol. Phys.* 72 (2008), No. 5, 1416–1425.
- 2007 *Listening to shapes* (Isospectrality), Ouderdag  
 Opening lecture Dutch university mathematical olympiad: *Diophantine equations*
- 2005 *How to get from A to B?* (Coarse geometry), Ouderdag  
*Euler, balloons, and all that*, VVW
- 2004 *Looking at diophantine equations “from a distance”*, NWD
- 2001– Various talks at open days for prospective students: *Can  $1 + \dots + m = 1^2 + \dots + n^2$ ?*
- 1995 Interviewed by Steven Stroeykens, *Fermat eindelijk overwonnen*, de Standaard (newspaper)

## Supervision & teaching (↓)

### Postdoc supervision

- 2009–2011 Bram Mesland (from MPIM; to post-doc at Manchester)  
 Jorge Plazas (from IHES; to post-doc at Granada)  
 Jonathan Reynolds (from UEA on Marie-Curie scholarship; to UK teacher training)
- 2011 Lode Wylleman (from Gent; to post-doc at Stavanger)
- 2015–2018 Martijn Caspers (from Münster; 2-year Marie-Curie scholarship, to lectureship at Delft)
- 2016–2019 Ana Ros Camacho (from Jussieu; 2-year Marie-Curie scholarship & 3-year NWO veni grant)

### PhD thesis supervision

- 2008 Oliver Lorscheid, *Toroidal automorphic forms for function fields*
- 2009 Jakub Byszewski, *Aspects of equivariant deformation theory* (co-supervisor Ariane Mézard)
- 2011 Jan Willem de Jong, *Zeta function rigidity — a view from non-commutative geometry*
- 2012 Jan Jitse Venselaar, *Classification & equivalences of noncommutative tori & quantum lens spaces*
- 2013 Janne Kool, *Curves, graphs and dynamics*
- 2014 Sebastian Klein, *Chow groups and intersection products for tensor triangulated categories* (co-supervisor Paul Balmer)
- 2016 Valentijn Karemaker, *Hecke algebras, Galois representations and abelian varieties*
- 2019 (exp.) Timo Kluck, *Computational and algebraic aspects of matrix models* (co-supervisors Ana Ros Camacho and Johan van de Leur)
- 2020 (exp.) Harry Smit, *Reconstruction problems for arithmetic schemes*
- 2021 (exp.) Jan-Willem van Ittersum, *Partitions and quasi-modular forms* (co-supervisor Don Zagier)
- 2021 (exp.) Marieke van der Wegen, *Computational aspects of gonality of graphs* (co-supervisor Hans Bodlaender)

Recipient of a Swaantje Mondt Fund Travel Grant 2017–2018

### Formal PhD supervision

- In the Dutch system, every PhD student needs a “promotor”; a formal supervisor who is a full professor
- 2021 (exp.) Lasse Grimmelt (daily supervisor: Damaris Schindler)

## Master thesis supervision

- 2004 Syb Botma, *Tro- $p$ -adical geometry* (co-supervisor: Stienstra)
- 2005 Sander Bessels, *One step beyond the solvable equation*
- 2006 Marco Streng, *Elliptic divisibility sequences with complex multiplication*  
published in Algebra & Number Theory, 2 (2008), No. 2, 183–208
- Ruden Teuben, *The theorem of Riemann–Roch for number fields*
- 2007 Maarten van Pruijssen, *Tautological cycles on Jacobians* (main supervisor: van der Geer)
- 2008 Esther Bod, *Hilbert’s tenth problem*
- Lotte van der Zalm, *Arithmetic equivalence*  
published in J. Numb. Th. 130, (2010), 1000–1012
- 2009 Rutger de Looij, *Primes in elliptic divisibility sequences*
- Sebastian Klein, *Reconstructive geometry in certain triangulated categories*  
Prize for best master thesis from national research cluster in geometry and quantum theory, 2009
- 2011 Jori Matthijssen, *Common divisors of elliptic divisibility sequences over function fields*
- Peter Toth, *Geometric abelian class field theory* (main supervisor: Heinloth)
- 2012 Renée Hoekzema, *Generalized causal dynamical triangulations in 2d* (main supervisor: Loll)
- 2014 Florian Kluck, *A metric in the space of spectral triples*
- Koen van Woerden, *Variation of the number of points on elliptic curves*
- Peter Lombaers, *Dessins d’enfants for surfaces*
- 2015 Jeroen Hanselman, *Semi-stable reduction and models of curves*
- 2016 Harry Smit, *Global field isomorphisms: a class field theoretical approach*
- Daniel Kroes, *Edge reconstruction of graphs*
- 2017 Tom van Overbeeke, *The Euler totient function in short intervals*  
preprint arxiv:1706.04028
- Lois van der Meijden, *Iteration of rational functions in positive characteristic*
- Maxim Faber, *Elliptic functions in condensed matter physics* (with Rembert Duine, ITF)
- 2017 Marieke van der Wegen, *Stable gonality of graphs* (with Hans Bodlaender, CS)  
preprint arxiv:1706.05670
- 2017 Sophie Huiberts, *How large is the shadow? Smoothed analysis of the simplex method* (main supervisor: Daniel Dadush)
- Jelco Bodewes, *Divisorial gonality of graphs* (with Hans Bodlaender, CS)  
preprint arxiv:1706.05670
- 2018 (exp.) Jeroen Huijben, *Deformation theory of group actions on curves*
- Djurre Tijsma, *Elements of finite order in the Nottingham group through automata*
- Marc Houben, *Dynamics on algebraic groups*
- Joost Fransen, *Essential dimension*

## Bachelor thesis supervision

- 2002 Ryk Westwood, *Dirichlet theorem for polynomials over finite fields*
- 2003 Wouter Waalewijn, *Rank of elliptic curves under field extensions*
- Marius de Leeuw, *Integer points on elliptic curves*
- Martijn Kool, *The local-global principle for conics and elliptic curves*
- Ruden Teuben, *Fermat’s last theorem for regular primes*
- 2004 Willem Maat, *Collatz Problems*
- Jan-Willem de Jong, *Cyclotomic field extensions of  $\mathbf{Q}$  and  $\mathbf{F}_q(T)$*
- Marco Streng, *Analytic proofs of quadratic and quartic reciprocity*
- 2005 Sander Bessels, *Primes of the form  $x^2 + ny^2$*

- 2006 Joris Borgdorff, *Expanding graphs*
- 2008 Wouter van der Bilt, *Elliptic curves and class numbers*
- 2009 Johan Konter, *K-theory of graphs and buildings*  
 published in: J. Konter and A. Vdovina, Classifying polygonal algebras by their  $K_0$ -group,  
 Proc. Edinburgh Math. Soc. (2) 58 no. 2 (2015), 485–497
- Daniele Giovannini, *Elementary proofs of Dirichlet's theorem for polynomials*
- Rianne Maes, *Cryptography with elliptic curves*
- 2010 Maria Velema, *Graph puzzles and exceptional geometries*
- Thom Klaasse, *Distances between metric spaces*
- 2012 Ederick Ruiz, *Finite  $p$ -groups are nilpotent*
- 2013 Willem Pranger, *Riemann's explicit formula for the prime counting function*
- 2014 Merlijn Staps, *Som- en verschilverzamelingen*  
 published in: The relative sizes of sumsets and difference sets, Integers 15 #A42 (2015), 6pp.
- 2014 Franziska Gerken, *The Ihara zeta function of a graph*
- 2015 Jan-Willem van Ittersum, *Mahler's measure and Möbius transformations*  
 published in: A group invariant version of Lehmer's conjecture on heights,  
 J. Numb. Th. 171 (2017), 145–154
- Thijs van der Gugten, *De laatste stelling van Fermat voor reguliere priemgetallen*
- Alexander Gietelink, *The noncommutative boundary of the moduli space of elliptic curves*
- Jetze Zoethout, *The edge adjacency matrix of a graph*
- Lars van de Berg, *De Riemann-hypothese voor elliptische krommen over een eindig lichaam*
- 2016 Ragnar Groot Koerkamp, *Computational aspects of gonality of graphs*
- Joost Franssen, *The casus irreducibilis*
- Mees Verheije, *De zeldzaamheid van polynomen met niet-maximale Galoisgroep*
- Joost Houben, *Undecidability of the spectral gap*
- 2018 Eva van Ammers, *Galois groups and Drinfeld modules*
- Rens de Heer, *Deciding solvability in radicals in polynomial time*
- Laurent Floor, *Provable security in cryptography*

### Other supervision

- 2002– Supervision of various small first year research projects (constructibility by ruler and compass, transcendental numbers, ...)
- 2006 Jannis Visser, *Computations in the K-theory of  $C^*$ -algebras of graphs with small Betti number* [University College Science Lab SCI 291 thesis]
- 2007 Valentijn Karemaker, Brigitte Sprenger, Bruno van Albada, *Understanding sliding puzzles, Rubik's Cube, and other permutation puzzles* [Junior College Thesis (high school students)]  
 van Melsen Prize for best science highschool thesis  
 ☞ prize winner at European Young Investigators Conference (St.-Petersburg)
- Puspita Sari, *Graph puzzles* [Master's Thesis in Mathematics Education (half of the thesis concerning mathematics research)]
- 2009 Saskia Chambille, Tessa Matser, Marisse Westbroek, *Gödel's theorem under a variable logic* [Junior College thesis (high school students)]
- Alvaro Veliz Osorio, *Holographic dendrology* [Master class “Calabi-Yau Geometries” essay]
- 2010 Ori Yudilevich, *Zeta functions on Riemannian manifolds and noncommutative spaces* [Master class “Arithmetic geometry and noncommutative geometry” essay]
- Javier Saenz, *On the group completion of the fundamental group of a compact Riemann surface* [Master class “Arithmetic geometry and noncommutative geometry” essay]

2015 Bobby Subroto, *Group cohomology* [honours project]

**Teaching (at Utrecht, unless stated otherwise)**

- 1993 *Calculus* (High school teaching Lyceum; St.-Lievencollege Gent, 4 weeks)
- 1993–1997 T.A. for *Algebra* (Gent, 2nd year) T.A. for *Computer algebra* (Gent, 3rd year)
- 2001 *Riemann surfaces* (Leuven, masters)
- Mathematics for Chemists: vector calculus* (bachelor level; evening classes)
- Algebraic number theory* (3rd year)
- 2001 *Algebra A (Rings)* (2nd year)
- Algebra B (Groups)* (2nd year)
- Algebra C (Galois theory)* (2nd year)
- 2002;03;08 *Caleidoscope of mathematics* (1st year); lecture on “Rational points on conics”
- 2002 *Rings* (2nd year)
- Groups and Galois theory* (2nd year)
- Elliptic curves* (3rd year) (2nd year)
- 2003 *Group theory* (2nd year)
- Galois theory* (2nd year)
- Seminar on  $p$ -adic numbers* (3rd year, following a book by Cassels)
- 2004 *Rings and Galois theory* (2nd year)
- The Mordell–Weil theorem for abelian varieties* (Spring School Abelian Varieties; 7h)
- 2005 *Group theory* (2nd year)
- 2006 *Rings and Galois theory* (2nd year)
- 2007 *Arithmetic of elliptic curves* (Summer School; 6h)
- 2008 *Elliptic curves* (national masters)
- Topics in mathematical research:  $K$ -theory of graphs* (Gent, guest lecture; 4h)
- 2008;09 *Diophantine equations: possibilities and impossibilities* (Junior College Utrecht; highschool Mathematics level D)
- 2009 *Moduli of elliptic curves* (masters)
- 2010 *Seminar on Fuchsian groups* (masters, following a book by Katok)
- Seminar on spectral triples* (masters, following original papers)
- 2011 *Seminar on metric spaces* (bachelor, following a book by Burago–Burago–Ivanov)
- What is mathematics?* (bachelor, 1st year)
- 2012 *21st century notions of “space” in mathematics* (Descartes College; university-wide honours)
- What is mathematics?* (bachelor, 1st year)
- Seminar on quadratic forms and  $L$ -series* (bachelor, following a book by Serre)
- 2013 *Seminar on Galois groups and fundamental groups* (masters, following a book by Szamuely)
- Group Theory* (bachelor, 2nd year)
- Seminar on Fourier analysis on number fields* (masters, following a book by Ramakrishnan and Valenza)
- Honours bachelor seminar on graph theory* (bachelor; with F. Beukers and T. Müller)
- 2014 *Group Theory* (bachelor, 2nd year)
- 2015 *Seminar on Arithmetic on Curves* (masters, following papers; with C. Faber)
- Orientation on research in geometry* (coordinator & presented 6h lectures on  $L$ -series)
- 2016 *Seminar Advanced Topics in Elliptic Curves* (masters; with V. Karemaker, following a book by Milne and papers)
- $p$ -adic numbers* (6h, bachelors; Summer School)
- Orientation on research in mathematics* (coordinator & presented 4h lectures on isospectrality)

- 2017 *Seminar Number Theory: Local-global principles* (masters; with D. Schindler and H. Smit), following books by Poonen and Davenport)  
*PhD research training* (for honours masters students; with H. Smit)  
*Zeta functions* (6h, bachelors; Summer School)
- 2018 *Orientation on research in mathematics* (coordinator)  
*Seminar Number Theory: Quadratic forms* (masters; with D. Schindler and H. Smit)  
*PhD research training* (for honours masters students; with J.W. van Ittersum)

## Service to the profession (↓)

### Editorships

- 2006–2009 Zebra (book series for high school students)
- 2008–2013 Nieuw Archief voor Wiskunde (Dutch Mathematical Society magazine)
- 2018– Indagationes Mathematicae (Royal Dutch Mathematical Society)

### Guest Editorships

- 2005 (edited with Frans Oort) *Problems from the workshop on “Automorphisms of Curves”* (Leiden, August, 2004), Rend. Sem. Mat. Univ. Padova 113 (2005), 129–177.
- 2008 (edited with Gerard Albers, Patrick Oonincx and Martin Raussen) *Amsterdam Archive*, special issue of Nieuw Arch. Wiskd. (5) 9, nr. 2 (June 2008), issued on the occasion of the fifth European Congress of Mathematics, Amsterdam, July 13–18, 2008.
- 2013 (edited with Gianni Landi) Special issue *Noncommutative Algebraic Geometry and its Applications to Physics* (Leiden, March, 2012), Journal of Geometry and Physics.

### Memberships of professional & learned societies

- 2005– Koninklijk Wiskundig Genootschap (Dutch Mathematical Society)
- 2005– American Mathematical Society (Life long member)
- 2006– GQT research cluster (Geometry and Quantum Theory)
- 2006– DIAMANT research cluster (Discrete, Interactive and Applied Mathematics, Algebra and Number Theory)
- 2012– Koninklijke Hollandsche Maatschappij der Wetenschappen (Royal Holland Society of Sciences and Humanities; elected member)

### Conference & Seminar Organisation

- 1996 *Drinfeld modules, moduli schemes and applications* (Alden-Biezen); with Van Geel.
- 1999 *Hilbert’s 10<sup>th</sup> problem: relations with arithmetic & algebraic geometry* (Gent); with Denef et. al.
- 1998–2001 weekly Oberseminar MPIM (Bonn)
- 1998–2001 weekly number theory lunch seminar MPIM (Bonn)
- 2000 *Arithmetic geometry*, meeting BMS/DMV meeting (Liège); with Huber, Künemann, Veys
- 2001 Day on 200 years of number theory after Gauss (Gent), with Van Geel
- 2001– Various Dutch Intercity Seminars on Number Theory at Utrecht
- 2002 Mini-workshop *Hilbert’s tenth problem, Mazur’s conjecture and divisibility sequences* (Oberwolfach); with Matijasevich, Shlapentokh, Vsemirnov, Zahidi  
Intercity Learning Seminar *Automorphic forms that admit an infinite series expansion*; with Dijkgraaf, Heckman, Looijenga
- 2003–2006 Weekly colloquium Utrecht; with Crainic, van de Leur
- 2004 *Automorphisms of curves* (Leiden); with Oort
- 2005 *Arithmetic geometry and high energy physics* (Leiden); with Marcolli, Waldron

- 2008 *Applications of noncommutative geometry* at ECM (Amsterdam); with Landsman  
*GQT meets DLAMANT* (cluster meeting) (Leiden); with Draisma  
*Genus two day*, Utrecht  
 12<sup>th</sup> *Workshop on Elliptic Curve Cryptography* (ECC), Utrecht; with Bernstein et. al.
- 2009 *The analytic theory of automorphic forms* (Utrecht); with Beukers  
 Seminar day  $\Delta$  and  $\Delta$ : *number theory and global analysis* (Utrecht)  
*Aachen-Köln-Lille-Siegen-etc. seminar day on modular forms* (Utrecht); with Bruinier
- 2010 Intercity seminar day on *Number theory and physics* (Utrecht)
- 2011 Intercity seminar day on *Number theory and measure theory* (Utrecht)  
 WONDER-afternoon on the work of Milnor (Utrecht)
- 2012 WONDER-afternoon on the work of Szemerédi (Amsterdam); with Eisner  
 Mini-symposium on *Noncommutative spaces* (Utrecht)  
*Noncommutative algebraic geometry and physics* (Leiden); with Bruzzo, Landi, Roubtsov
- 2013 WONDER-afternoon on the work of Deligne (Delft); with van Neerven  
*Special functions and special numbers* (Utrecht); with Dahmen  
 Mini-symposium on *combinatorics & arithmetic geometry* (Utrecht)  
 Intercity seminar day on *Gonality* (Utrecht)
- 2013-2014 *Geometry and Quantum Theory Graduate School & Colloquium* (Woudschoten); with Cavalcanti, Posthuma and Solleveld
- 2013-2017 Seminar *Geometry and Algebra* (Utrecht); with Faber
- 2014 WONDER-afternoon on the work of Sinai (Eindhoven); with Koren  
 Berkovich Skeletons: a minicourse by Nicaise and Payne (Utrecht); with Draisma  
 Intercity seminar day on *Number Theory and Algebraic Groups* (Utrecht)  
 Mini-symposium on *Triangulated categories & algebraic geometry* (Utrecht)
- 2015 *Aachen-Köln-Lille-Siegen-etc. seminar day on modular forms* (Utrecht); with Zwegers
- 2016 Mini-symposium *Hecke meets Galois* (Utrecht)

### Reviewing & Refereeing

- 1999- Reviewer for *Zentralblatt der Mathematik* (approx. 3 reviews per year, total 45)
- 1999- Referee/panelist at ANR, DFG, EPSRC, ERC, ESF, ISF, FWO, NSERC, NSA, NSF, NWO
- 2005-2006 Selection committee for NWO personal early career grants (VENI)
- 2009-2011 Selection committee for NWO MEERVOUD programme (“more women in exact sciences”)
- 2012 Selection committee for NWO-EW Free Competition grants
- 2013 Selection committee for NWO-EW TOP-2 Grants (Chair)
- 2017- ESF College of Expert Reviewers, member
- 1999- Referee for journals (multiple hits; approx. 5 requests per year): *Acta Arith.*, *Acta Math.*, *Adv. Math.*, *Am. J. Math.*, *Ann. E.N.S.*, *Ann. Inst. Fourier*, *Ann. of K-theory*, *Archiv Math.*, *Comm. Numb. Th. Phys.*, *Compos. Math.*, *C.R.A.S.*, *Discrete Math.*, *Duke Math. J.*, *Illinois J. Math.*, *Indagationes Math.*, *Integers*, *I.M.R.N.*, *Int. J. Numb. Th.*, *J. Algebra*, *J. A.M.S.*, *J. Geom. Phys.*, *J. London Math. Soc.*, *J. Noncommut. Geom.*, *J. Numb. Th.*, *J. Pure Appl. Alg.*, *Lett. Math. Phys.*, *Proc. A.M.S.*, *Proc. Edinburgh Math. Soc.*, *Math. Ann.*, *Math. Proc. Camb. Phil. Soc.*, *Ramanujan J.*, *Quarterly J. of Math.*, etc.
- 1999- Referee for various proceedings volumes

### PhD thesis evaluation committees

— R=reading committee, E=exam committee; at Utrecht Mathematics unless indicated

— In the period 2015-2018, I chair (most) PhD defenses, so I cannot be on the committees

- 1999 Karim Zahidi (R, Gent)
- 2001 Francis Gardeyn (R, ETHZ/Gent)
- 2008 Rogier Swierstra (R), Cécile Poirier (R, RuG/Toulouse); Sander Dahmen (R), Giorgio Trentinaglia (R), Alex Boer (E), Camilo Arias Abad (E)
- 2009 Charlene Kalle (E), Vincent van der Noort (E)
- 2010 Marco Streng (R, Leiden), Andor Lukacs (E), Jeroen Sijssling (R), Marius de Leeuw (R, UU Physics), Pjotr Negadailov (E)
- 2011 Dave Carchedi (R), Maarten van de Meent (R, UU Physics), Job Kuit (E), Vadim Gorin (E), Bora Yalkinoglu (E, Paris 8)
- 2012 Bart van den Dries (E), Timothy Budd (R, UU Physics)
- 2013 Simen Rustad (R, Oslo), Ionut Marcu (E), Bas Fagginger-Auer (E)
- 2015 Athanasios Angelakis (R, Leiden), Roberta Iseppi (R, Nijmegen); Enrico Varela (R, Saarbrücken)

### **Other service to the profession**

- 2007;09;12;13 Problem author at the Dutch University Mathematics Olympiad (LIMO)
- 2008 Initiated project on polyhedra at two elementary schools in Utrecht
- 2008 Initiated project Dutch subtitles for documentary about Julia Robinson; for high school use
- 2009-2013 Board of Mathematical Cluster GQT “Geometry and Quantum Theory”
- 2010 Co-author of research self-assessment of GQT
- 2009-2011 Director of the Research school “Mathematical Research Institute” (MRI)
- 2009-2014 Board and steering committee ESF-network “Interaction of low-dimensional Topology and Physics” (ITGP)
- 2011-2014 (Founding) director Dutch Research Graduate School for Mathematics (WONDER)
- 2011 Examiner (mathematics) for Unitas’ “375 years Utrecht University: Knowledge Game”
- 2012 Search committee professor of non-commutative geometry at Antwerp
- 2012 Search committee professor of algebra and number theory at Antwerp
- 2012 Search committee associate professor at QGM/Aarhus
- 2012 Committee Update of Dutch Masterplan for Mathematics (NWO)
- 2012 Committee on “learning outcomes” for Flemish mathematics Bachelors/Masters (VLIR)
- 2012- Program committee “Nationale Wiskunde Dagen” (Math Teacher’s Event)
- 2012- Vice-chair of the National committee on Mathematical Research (Platform Mathematics)
- 2013-2015 Selection committee ASML Young Talent Prize for mathematics students
- 2015 Search committee professor of algebraic geometry at ULB Brussels
- 2016 ESF Lead reviewer for the mathematical research unit, University of Luxemburg
- 2016 Selection committee for the 2017 Brouwer Medal (trianual prize of the KWG)
- 2017 Search committee tenure-track assistant professor at TU Delft
- 2018- Member of the Mathematics Round Table, advisory committee of NWO Domain Sciences
- 2018 Selection committee for the Martinus van Marum prize (KHMW)

### **Service to the university**

- 2002 Curriculum committee for the Bachelor “Mathematics and Applications”
- 2007-2009 Departmental advisory board
- 2008 Teaching qualification committee
- 2007 Chairman advisory committee on the future of the mathematical institute
- 2009 Chairman committee on efficient teaching (curriculum review)

- 2009 Search committee for a chair “ICT use in mathematics education”
- 2009 Co-author and coordinator of the departmental research self-assessment 2003-2008
- 2010-2013 Advisory committee for grant applications in natural sciences (2012- Chair)
- 2011 Interdisciplinary “Task force mathematical institute”
- 2011 Nominator for Tom Ward (UEA) as *F.C. Donders* visiting professor
- 2011- Ambassador of natural sciences at Utrecht (faculty reorganization subcommittee)
- 2011 Co-author departmental strategic plan
- 2011 Committee on tenure/hiring criteria
- 2011- Chair of the Monna Trust committee
- 2012 Search committee for two full professors
- 2012 Chair of search committee for one assistant professor
- 2012 Committee on midterm research evaluation
- 2013 Chair of search committee for one assistant professor
- 2013 Chair of assessment committee for a profile chair in Scientific Computing
- 2013 Faculty project team Gender
- 2014 Member of search committee for an endowed chair on Public understanding of science
- 2015 Search committee for two assistant professors/Westerdijk Fellows (ex officio)
- 2015-2018 Chair of the department of mathematics (mathematical & science education institute)
- Major projects initiated or (co-)executed:
- Refurbishment of Library/Discussion rooms for students/staff (outcome: labelled “top-program”)
  - 6-yearly research evaluation (outcome: highest possible - “excellent” in research, relevance and viability)
  - Introduction of an independent management structure for the science education institute
  - Introduction of informal lunch meetings & new quarterly colloquium
  - Negotiations for university professor appointment in mathematics
  - Gender policy; increase in percentage of female research staff from 7% to 15%
  - PhD student scan and workshop on PhD supervision (with Elmira Nijhuis and Jason Frank)
- 2015 Review committee of bachelor curriculum mathematics, with special attention for algebra and modelling
- 2016 Scientific scan committee of professors in CS department
- 2016 Hiring committee for Head of Support, Science Faculty
- 2016 Search committee for two assistant professors (ex officio)
- 2016 Review committee of bachelor curriculum mathematics, with special attention for analysis
- 2017 Organisation of the exhibit “Women in Mathematics throughout Europe” (Sylvie Paycha; Noel Matoff)
- 2017 Organisation of an interactive interview with Alan Sokal (of “Impostures Intellectuelles”) on the relation between natural and social sciences
- 2018 Initiated a match-making event between female junior and senior staff in the science faculty
- 2018 Running a ‘meet the expert’-session in the UU Research Leadership course, on “creating and maintaining diversity”
- 2018- Member of the mathematics curriculum committee

## Publications

### Research articles in refereed journals & refereed conference proceedings

- 1995 [1] *Sur les zéros des séries d'Eisenstein de poids  $q^k - 1$  pour  $GL(2, \mathbf{F}_q[T])$* , C. R. Acad. Sci. Paris, 321, Ser. I (1995) 817-820.
- 1997 [2] *Drinfeld modular forms of level  $T$* , in: Drinfeld modules, modular schemes and applications (eds. E.-U. Gekeler et al.), pp. 272-281, World Scientific - Singapore, 1997.
- [3] *Drinfeld modular forms of weight one*, J. Numb. Th. 67, nr. 2 (1997), 215-228.
- 1999 [4] *Stockage diophantien et hypothèse abc généralisée*, C. R. Acad. Sci. Paris, 328, Ser. I (1999), 3-8.
- [5] *Zeros of Eisenstein series, quadratic class numbers and supersingularity for rational function fields*, Math. Ann. 314, nr. 1 (1999), 175-196.
- [6] *Deligne's congruence and supersingular reduction of Drinfeld modules*, Arch. der Math. 72 (1999), 346-353.
- 2000 [7] (with Karim Zahidi) *Topology of diophantine sets: remarks on Mazur's conjectures*, in: Hilbert's Tenth Problem: Relations with arithmetic and algebraic geometry, Contemp. Math. 270 (2000), 253-260.
- 2001 [8] (with Fumiharu Kato and Aristides Kontogeorgis) *Discontinuous groups in positive characteristic and automorphisms of Mumford curves*, Math. Ann. 320, nr. 1 (2001), 55-85.
- [9] *Two-torsion in the Jacobian of hyperelliptic curves over finite fields*, Arch. der Math. 77 (2001), 241-246.
- [10] *The 2-primary class group of certain hyperelliptic curves*, J. Numb. Th. 91, nr. 1 (2001), 174-185.
- 2003 [11] (with Fumiharu Kato) *Equivariant deformation of Mumford curves and of ordinary curves in positive characteristic*, Duke Math. J. 116, nr. 3 (2003), 431-470.
- [12] (with Fumiharu Kato) *Mumford curves with maximal automorphism group II: Lamé type groups in genus 5-8*, Geom. Dedicata 102 (2003), 127-142.
- 2004 [13] (with Fumiharu Kato) *Mumford curves with maximal automorphism group*, Proc. A.M.S. 132 (2004), 1937-1941.
- 2005 [14] (with Fumiharu Kato) *Zur Entartung schwach verzweigter Gruppenoperationen auf Kurven*, J. reine und angew. Math. 589 (2005), 201-236.
- [15] (with Karim Zahidi and Thanases Pheidas) *Division-ample sets and the Diophantine problem for rings of integers*, J. Théorie des Nombres de Bordeaux 17 (2005), 727-735.
- [16] *Lifting an automorphism to finite characteristic*, Rend. Sem. Mat. Univ. Padova 113 (2005), 137-139.
- 2006 [17] (with Ariane Mézard) *Relèvements des revêtements de courbes faiblement ramifiés*, Math. Z. 254 (2006), 239-255.
- 2007 [18] (with Karim Zahidi) *Elliptic divisibility sequences and undecidable problems about rational points*, J. reine und angew. Math. 613 (2007), 1-33.
- [19] (with Matilde Marcolli, Kamran Reihani and Alina Vdovina) *Noncommutative geometry*

on trees and buildings, in: *Traces in Geometry, Number Theory and Quantum Fields* (eds. S. Albeverio et. al.), *Aspects of Math. E* 38, pp. 73-98, Vieweg Verlag (2007).

- 2008 [20] (with Oliver Lorscheid and Matilde Marcolli) *On the  $K$ -theory of graph  $C^*$ -algebras*, *Acta Appl. Math.* 102 (2008), no. 1, 57-69.
- [21] (with Alexandra Shlapentokh) *Defining the integers in large subrings of number fields using one universal quantifier*, *Proc. St.-Petersburg Math. Sem.* 358 (2008), 199-223 (special volume: 60th birthday volume for Yuri Matijasevich "Studies in Constructive Mathematics and Mathematical Logic, Part XI", ed. Maxim Vserminov) and *J. Math. Sci.* 158 (2009), no. 5, 713-726.
- [22] (with Matilde Marcolli) *Zeta functions that bear the shape of a Riemann surface*, *J. Geom. Phys.* 58 (2008), no. 5, 619-632.
- 2009 [23] (with Oliver Lorscheid) *Toroidal automorphic forms for certain function fields*, *J. Numb. Th.* 129 (2009), 1456-1463.
- [24] (with Jakub Byzewski) *Which weakly ramified group actions admit a universal formal deformation?*, *Ann. Inst. Fourier* 59 (2009), no. 3, 877-902.
- 2010 [25] (with Aristides Kontogeorgis and Lotte van der Zalm) *Arithmetic equivalence, the Goss zeta function, and a generalisation*, *J. Numb. Th.* 130 (2010), no. 4, 1000-1012.
- [26] (with Nikolas Akerblom) *A compact codimension two braneworld with precisely one brane*, *Phys. Rev. D* 81 (2010), 124025 (6pp.).
- [27] (with Fumiharu Kato and Aristides Kontogeorgis) *Three examples of the relation between rigid-analytic and algebraic deformation parameters*, *Israel J. Math.* 180 (2010), 345-370.
- 2011 [28] (with Nikolas Akerblom, Gerben Stavenga and Jan-Willem van Holten) *Nonrelativistic Chern-Simons vortices on the torus*, *J. Math. Phys.* 52 (2011), 072901 (17 pp.).
- [29] (with Nikolas Akerblom) *Relative entropy as a measure of inhomogeneity in general relativity*, *J. Math. Phys.* 53 (2012), 012502 (10 pp.).
- 2012 [30] (with Jakub Byszewski and Fumiharu Kato) *Un anneau de déformation universel en conducteur supérieur*, *Proc. Japan Acad. Sci., Ser. A, Math. Sci.* 88 (2012), nr. 2, 25-27.
- [31] (with Oliver Lorscheid) *Toroidal automorphic forms, Waldspurger periods and double Dirichlet series*, in: *Multiple Dirichlet Series, L-functions and Automorphic Forms*, *Progress in Math.* 300, Birkhäuser (2012).
- [32] (with Jan Willem de Jong) *The spectral length of a map between Riemannian manifolds*, *J. Noncommut. Geom.* 6 (2012), 721-748.
- [33] (with Jonathan Reynolds) *Matrix divisibility sequences*, *Acta Arith.* 156 (2012), 177-188.
- 2013 [34] (with Janne Kool) *Measure theoretic rigidity for Mumford curves*, *Ergodic Th. Dyn. Syst.* 33, nr. 3 (2013), 851-869.
- [35] (with Matilde Marcolli) *Graph reconstruction and quantum statistical mechanics*, *J. Geom. Phys.* 72 (2013), 110-117.
- [36] *Curves, dynamical systems, and weighted point counting*, *Proc. Natl. Acad. Sci. USA* 110, no. 24 (2013), 9669-9673.
- 2014 [37] (with Matilde Marcolli) *Quantum statistical mechanics, L-series and anabelian geometry I:*

*Partition Functions*, in: Trends in Contemporary Mathematics, INdAM Series, Vol. 8 (2014), 47–57, Springer Verlag.

2015 [38] (with Fumiharu Kato and Janne Kool) *A combinatorial Li-Yau inequality and rational points on curves*, Math. Ann. 361, no. 1 (2015), 211–258.

2016 [39] (with Jonathan Reynolds) *The perfect power problem for elliptic curves over function fields*, New York J. Math. 22, 95–114 (2016).

2017 [40] (with Aristides Kontogeorgis) *Distances in spaces of physical models: partition functions versus spectra*, Lett. Math. Phys. 107, Issue 1, 129–144 (2017).

[41] (with Valentijn Karemaker) *Hecke algebra isomorphism and adelic points on algebraic groups*, preprint, Doc. Math. 22, 851–871 (2017).

### Preprints

2015 [Pre1] (with Janne Kool) *Edge reconstruction of the Ihara zeta function*, arxiv:1507.03411 (19 pp., 2015).

2016 [Pre2] (with Janne Kool) *Rigidity and reconstruction for graphs*, arxiv:1601.08130 (9 pp., 2016)

2017 [Pre3] (with Bart de Smit, Xin Li, Matilde Marcolli and Harry Smit) *Reconstructing global fields from Dirichlet L-series*, arxiv:1706.04515 (14 pp., 2017).

[Pre4] (with Xin Li, Matilde Marcolli and Harry Smit) *Reconstructing global fields from dynamics in the abelianized Galois group*, arxiv:1706.04517 (17 pp., 2017).

[Pre5] (with Jelco M. Bodewes, Hans L. Bodlaender and Marieke van der Wegen) *Recognizing hyperelliptic graphs in polynomial time*, arxiv:1706.05670 (33 pp., 2017).

2018 [Pre6] (with Jakub Byszewski) *Dynamics on abelian varieties in positive characteristic*, arxiv:1802.07662 (47 pp., 2018)

### Unpublished

2002 [U1] (with Marina Tripolitaki) *Torsion of Drinfeld modules and equicharacteristic unimodular Galois covers*, preprint arxiv:math.NT/0209023 (2002), unpublished, should be revised.

2010 [U2] (with Matilde Marcolli) *Quantum statistical mechanics, L-series and anabelian geometry*, preprint arxiv:1009.0736 (2010), 46 pp., not for publication, split into 3 parts with different co-authors ([37], [Pre3], [Pre4] above).

### Research expository writing

1993 [M] *Endomorphisms of elliptic curves*, Master's thesis (Universiteit Gent), 100 pp.

1997 [T] *Geometric properties of modular forms over rational function fields*, PhD thesis (Universiteit Gent), 141 pp.

1997 [E1] *A survey of Drinfeld modular forms*, in: Drinfeld modules, modular schemes and applications (eds. E.-U. Gekeler et al.), pp. 167–187, World Scientific - Singapore, 1997.

2000 [E2] *Nichtarchimedische Geometrie*, in: Max-Planck-Gesellschaft: Jahrbuch 2000, pp. 566–571, Verlag Vandenhoeck & Ruprecht, Goettingen, 2000.

[E3] *Diangle groups*, in: Proceedings 2000 Kinosaki Symposium on algebraic geometry, pp. 138–143, 2001.

- 2005 [E4] (with Fumiharu Kato) *The p-adic icosahedron*, Notices A.M.S. 52, no. 7 (August, 2005), 720–727.
- 2011 [E5] *Class field theory as dynamical system*, in: Arbeitstagung 2011 (Don Zagier 60th birthday conference), Publication of the Max-Planck-Institut für Mathematik, Bonn, pp. 83–85 (arxiv:1107.2159).
- [E6] *Reconstructing global fields using noncommutative geometry*, Oberwolfach Report 45 (2011), 27–30.
- 2016 [E7] *Reconstruction problems in number theory in the light of  $C^*$ -algebras*, Oberwolfach Report 2016/6, 2016, 20–22.

### Popular articles, long book reviews & opinion pieces (mostly in Dutch)

- 2002 [P1] *Aritmetische meetkunde*, [What is arithmetical geometry?] Vakidoot (Studievereniging A-Eskwadraat), Jaargang '02-'03, nr. 1 (Themanummer "Oriëntatie"), 5–7.
- 2004 [P2] *Parti d'un exercice, on se retrouve avec une théorie - over Jean-Pierre Serre*, [About Jean-Pierre Serre] Nieuw Arch. Wiskd. (5) 5 (2004), no. 1, 35–37.
- 2005 [P3] *Diophantische vergelijkingen vanuit de verte bekeken*, [Looking at Diophantine equations from a distance] Nieuwe Wiskrant 24, no. 4 (June 2005), 23–30.
- [P4] (illustrated by cartoonist Peter van Straaten) *Klaas Landsman: Requiem voor Newton — Turks Fruit der Natuurkunde*, [Long Book review] Nieuw Arch. Wiskd. (5) 6 (2005), no. 4, 317–319.
- 2006 [P5] *Diophantische vergelijkingen - Kunnen we het echt?* [Diophantine equations: can we really solve them?] Nieuw Arch. Wiskd. (5) 7 (2006), no. 1, 37–41.
- [P6] *Meetkunde, meetkundes, en groepen*, [Geometry, geometries and groups, on Klein's Erlangen Programme], Vakidoot (Studievereniging A-Eskwadraat), Jaargang '05-'06, nr. 4 (Themanummer "Parallel"), 4–9.
- 2008 [P7] *België-Nederland 1-0: Sole meunière*, [Column] Nieuw Arch. Wiskd. (5) 9 (2008), no. 1, 65.
- [P8] *België-Nederland 2-0: De laatste der Bourbakisten*, [Column] Nieuw Arch. Wiskd. (5) 9 (2008), no. 3, 207.
- [P9] *Math Girls Rule, A Dutch success story*, Nieuw Arch. Wiskd. (5) 9 (2008), no. 2 (Special volume for ECM Amsterdam), 108.
- [P10] *Duitsland-Nederland 1-0: The Architect Sketch, part 2*, [Column] Nieuw Arch. Wiskd. (5) 9 (2008), no. 4, 273.
- [P11] *Diophantische vergelijkingen: mogelijkheden en onmogelijkheden*, [Diophantine equations: possibilities and impossibilities, a text for high school students], wiskunde-D keuzemodule, Epsilon Uitgaven (online, 2008), 51pp.
- [P12] (with Steven Wepster) *Docentenhandleiding bij (P10)*, [Teacher's guidebook accompanying (P10)], 28pp. (2008).
- 2009 [P13] *The Princeton Companion — Waardig gezelschap aan de koffietafel*, [Long book review] Nieuw Arch. Wiskd. (5) 10 (2009) 40–41.
- [P14] *Het meten van dubbelzinnigheid* ["Measuring ambiguity"; Inaugural lecture], Univer-

siteit Utrecht (2009), abbreviated version in: *Nieuw Arch. Wiskd.* (5) 10 (2009), no. 2, 84–90.

[P15] *Wiskundig onderzoek per computer?* (ed.) [Mathematical research by computer?], *Nieuw Arch. Wiskd.* (5) 10 (2009), 197–201.

2010 [P16] *Yuri Manin: Mathematics as Metaphor — Ik loop blootsvoets over worstenbroodjes* [Long book review] *Nieuw Arch. Wiskd.* (5) 11 (2010), 117–118.

[P17] (with Klaas Landsman and Walter van Suijlekom) *The flashes of insight never came for free — Interview with Alain Connes.* *Nieuw Arch. Wiskd.* (5) 11 (2010), 250–256.

2012 [P18] *Alexander Masters: Simon, The Genius in my Basement — Het gapend genie* [Long book review] *Nieuw Arch. Wiskd.* (5) 4, 276–277 (2012).

2013 [P19] *DVD Review of “Late Style – Yuri I. Manin looking back on a life in mathematics”*, *Notices A.M.S.* 60, no. 1, 84–85 (2013).

2014 [P20] *Differentiaalmeetkunde in de getaltheorie* [Differential Geometry in Number Theory], *Nieuw Arch. Wiskd.* (5) 15, 188–191 (2014).

2014 [P21] *Het lustrum van WONDER* [Five years of WONDER], *Nieuw Arch. Wiskd.* (5) 16, 106–107 (2015).

2017 [P22] (with Jan van Neerven) *No one had every accused me of proving a theorem before — Interview with Ken Ribet*, *Nieuw Arch. Wiskd.* (5) 18 115–121 (2017).

#### Unpublished lecture notes (available upon request)

2005 [L1] *Theorem G of Taylor’s article “Remarks on a conjecture of Fontaine and Mazur”* (Intercity Seminar Arithmetic Geometry; notes written by Peter Bruin)

2008 [L2] *Galoistheorie* (in Dutch; based on notes of Jan Van Geel, version 6.0)

2016 [L3] *p-adic numbers* (Utrecht Summer School on Geometry)

2017 [L4] *Zeta functions* (Utrecht Summer School on Geometry)

#### Short reviews

1997 [B1] Yu. Manin and S. Gelfand, *Methods of homological algebra*, *Mededelingen Wiskundig Genootschap*, review 97.03-18-839 (1997).

2000 [B2] H. Cartan and S. Eilenberg, *Homological algebra* (reprint), *Nieuw Arch. Wiskd.* (5) 1, nr. 3 (2000).

2001 [B3] D. Haskell, A. Pillay and C. Steinhorn (eds.), *Model theory, algebra and geometry*, *Nieuw Arch. Wiskd.* (5) 2, nr. 4 (2001).

2004 [B4] A. Stubhaug, *Ein aufleuchtender Blitz: Niels Henrik Abel und seine Zeit*, *Nieuw Arch. Wiskd.* (5) 5, nr. 2 (2004).

2011 [B5] A. Terras, *Zeta Functions of Graphs: A Stroll through the Garden*, *Nieuw Arch. Wiskd.* (5) 12, nr. 3 (2011).

2015 [B6] Leila Schneps (ed.), *Alexandre Grothendieck, A Mathematical Portrait*, *Nieuw Arch. Wiskd.* (5) 16, nr. 1 (2015).

1999–2013 45 reviews in *Zentralblatt MATH*, [zbmath.org/?q=rv:00009545](https://zbmath.org/?q=rv:00009545).