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Research area

Number theory and algebraic geometry.

Academic positions

- 2021– **Associate professor**, *U Leiden*.
- 2007–2021 **Assistant professor**, *U Leiden*.
- 2005–2006 **Postdoctoral researcher**, *U Leiden*.
- 2001–2004 **PhD student**, *U Amsterdam*.
Supervisor: G. van der Geer. Date of PhD: 14 December 2004

Personal grants

- 2015 **TOP Grant**, *Refined tautological relations on moduli of curves*, NWO, 209 k€.
- 2006 **VENI grant**, *The Shafarevich conjecture made effective*, NWO, 208 k€.

Preprints

- 2022 **Computing periods of limit mixed Hodge structures**, (*joint with S. Bloch and E. Sertöz*), in preparation.
- 2022 **Heights on curves and limits of Hodge structures**, (*joint with S. Bloch and E. Sertöz*), arXiv:2206.01220.
- 2022 **Rings of Siegel–Jacobi forms of bounded relative index are not finitely generated**, (*joint with A. Botero, J. Burgos Gil and D. Holmes*), arXiv:2203.14583.
- 2021 **Chern–Weil and Hilbert–Samuel formulae for singular hermitian line bundles**, (*joint with A. Botero, J. Burgos Gil and D. Holmes*), arXiv:2112.09007.

Publications in peer reviewed journals

- 2022 **Tropical moments of tropical Jacobians**, (*joint with F. Shokrieh*), to appear in Canadian Journal of Mathematics.
- 2022 **Jumps in the height of the Ceresa cycle**, (*joint with F. Shokrieh*), to appear in Journal of Differential Geometry.
- 2022 **Metric graphs, cross ratios, and Rayleigh’s laws**, (*joint with F. Shokrieh*), to appear in Rocky Mountain Journal of Mathematics.
- 2022 **Faltings height and Néron–Tate height of a theta divisor**, (*joint with F. Shokrieh*), *Compositio Mathematica*, 158 (2022), 1–32.
- 2020 **Frobenius’ theta function and Arakelov invariants in genus three**, *Pure and Applied Mathematics Quarterly*, 16 (2020), no. 5, 1387–1418.
- 2020 **Chern–Weil theory for line bundles with the family Arakelov metric**, (*joint with M. Jespers*), *Michigan Mathematical Journal*, 69 (2020), no. 1, 3–40.

- 2019 **Faltings delta-invariant and semistable degeneration**, *Journal of Differential Geometry*, 111 (2019), no. 2, 241–301.
- 2018 **On the height of Gross-Schoen cycles in genus three**, *Research in Number Theory*, (2018) 4:38.
- 2018 **Néron–Tate heights of cycles on jacobians**, *Journal of Algebraic Geometry*, 27 (2018), 339–381.
- 2018 **Singularities of the biextension metric for families of abelian varieties**, (*joint with J. Burgos Gil and D. Holmes*), *Forum Math. Sigma*, 6 (2018), Paper No. e12.
- 2017 **Néron models and the height jump divisor**, (*joint with O. Biesel and D. Holmes*), *Transactions of the American Mathematical Society*, 369 (2017), 8685–8723.
- 2017 **Positivity of the height jump divisor**, (*joint with J. Burgos Gil and D. Holmes*), *International Mathematics Research Notices*, rnx169 (2017).
- 2015 **Point-like limit of the hyperelliptic Zhang–Kawazumi invariant**, *Pure and Applied Mathematics Quarterly*, 11 (2015), 633–653.
- 2015 **Asymptotics of the Néron height pairing**, (*joint with D. Holmes*), *Mathematical Research Letters*, 22 (2015), 1337–1371.
- 2014 **Canonical heights and division polynomials**, (*joint with J. S. Müller*), *Mathematical Proceedings of the Cambridge Philosophical Society*, 157 (2014), 357–373.
- 2014 **Asymptotic behavior of the Kawazumi–Zhang invariant for degenerating Riemann surfaces**, *Asian Journal of Mathematics*, 18 (2014), 507–524.
- 2014 **Normal functions and the height of Gross-Schoen cycles**, *Nagoya Mathematical Journal*, 214 (2014), 53–77.
- 2013 **Second variation of Zhang’s λ -invariant on the moduli space of curves**, *American Journal of Mathematics*, 135 (2013), 275–290.
- 2012 **Special values of canonical Green’s functions**, *Mathematische Zeitschrift*, DOI 10.1007/s00209-012-1064-2.
- 2012 **Local heights on Galois covers of the projective line**, *Acta Arithmetica*, 152 (2012), 51–70.
- 2011 **Conjecture de Shafarevitch effective pour les revêtements cycliques**, (*joint with G. Rémond*), *Algebra and Number Theory*, 5 (2011), 1133–1143.
- 2011 **One half log discriminant and division polynomials**, *Archiv der Mathematik*, 97 (2011), 251–257.
- 2011 **Symmetric roots and admissible pairing**, *Transactions of the American Mathematical Society*, 363 (2011), 4263–4283.
- 2010 **Covers of surfaces with fixed branch locus**, (*joint with B. Edixhoven and J. Schepers*), *International Journal of Mathematics*, 21 (2010), 859–874.
- 2010 **Admissible constants for genus two curves**, *Bulletin of the London Mathematical Society*, 42 (2010), 405–411.
- 2010 **Theta functions on the theta divisor**, *Rocky Mountain Journal of Mathematics*, 40 (2010), 155–176.
- 2009 **Local invariants attached to Weierstrass points**, *manuscripta mathematica*, 129 (2009), 273–292.
- 2007 **Explicit Mumford isomorphism for hyperelliptic curves**, *Journal of Pure and Applied Algebra*, 208 (2007), 1–14.
- 2005 **On the Arakelov theory of elliptic curves**, *l’Enseignement Mathématique*, 51 (2005), 179–201.
- 2005 **Arakelov invariants of Riemann surfaces**, *Documenta Mathematica*, 10 (2005), 311–329.

Contributions to books

- 2016 **Torus bundles and 2-forms on the universal family of Riemann surfaces**, in: A. Papadopoulos (ed.), Handbook of Teichmüller theory, Volume VI. EMS Publishing House 2016.
- 2011 **Short introduction to heights and Arakelov theory**, (*joint with B. Edixhoven*), in: J.-M. Couveignes, B. Edixhoven (eds.), Computational aspects of Modular Forms and Galois Representations. Annals of Mathematics Studies 176, Princeton University Press 2011.
- 2011 **Applying Arakelov theory**, (*joint with B. Edixhoven*), in: J.-M. Couveignes, B. Edixhoven (eds.), Computational aspects of Modular Forms and Galois Representations. Annals of Mathematics Studies 176, Princeton University Press 2011.
- 2011 **Bounds for Arakelov invariants of modular curves**, (*joint with B. Edixhoven*), in: J.-M. Couveignes, B. Edixhoven (eds.), Computational aspects of Modular Forms and Galois Representations. Annals of Mathematics Studies 176, Princeton University Press 2011.
- 2008 **Gauss map on the theta divisor and Green's functions**, in: B. Edixhoven, G. van der Geer, B. Moonen (eds.), Modular Forms on Schiermonnikoog, Cambridge University Press 2008.
- 2005 **Faltings' delta-invariant of a hyperelliptic Riemann surface**, in: G. van der Geer, B. Moonen, R. Schoof (eds.), Number Fields and Function Fields: Two Parallel Worlds. Progress in Mathematics vol. 239, Birkhäuser Verlag 2005.

Books edited

- 2012 **Geometry and Arithmetic**, C. Faber, G. Farkas, R. de Jong (eds.), EMS Series of Congress Reports, EMS Publishing House 2012.

PhD thesis

- 2004 **Explicit Arakelov geometry**, *U Amsterdam*.

Teaching and supervision

Qualifications

- 2011 **Basiskwalificatie Onderwijs (BKO)**, *basic Dutch university teaching qualification*, Leiden.

PhD students

- 2025 **S. Wolters**, U Leiden.
- 2022 **R. Wang**, *Arakelov geometry of genus three curves*, co-supervised with D. Holmes, U Leiden. Funded by a CSC Scholarship
- 2022 **S. van der Lugt**, *Tautological differential forms on moduli spaces of curves*, U Leiden. Funded by TOP Grant "Refined tautological relations on moduli spaces of curves"
- 2018 **E. Martinez**, *Stability of Arakelov bundles over arithmetic curves and Bridgeland stability conditions on holomorphic triples*, main advisor A. Schmitt, FU Berlin. Funded by Graduiertenkolleg "Moduli and automorphic forms: arithmetic and geometric aspects"
- 2018 **U. Doğan**, *Overconvergent Fréchet Algebras in rigid analysis*, main advisor E. Große-Klönne, HU Berlin. Funded by Graduiertenkolleg "Moduli and automorphic forms: arithmetic and geometric aspects"
- 2018 **N. Damjanovic**, *Arakelov inequalities and semistable families of curves uniformized by the unit ball*, co-supervised with V. Koziarz, U Bordeaux/U Leiden. Funded by ALGANT consortium
- 2017 **M. Djukanovic**, *Split jacobians and lower bounds on heights*, co-supervised with F. Pazuki, U Bordeaux/U Leiden. Funded by ALGANT consortium

- 2017 **A. Botero**, *b-divisors on toric and toroidal embeddings*, main advisor J. Kramer, HU Berlin.
Funded by Graduiertenkolleg "Moduli and automorphic forms: arithmetic and geometric aspects"
- 2013 **A. Javanpeykar**, *Arakelov invariants of Belyi curves*, co-supervised with B. Edixhoven and J.-B. Bost, U Leiden/U Paris-Sud 11.
Funded by ALGANT consortium
- 2010 **P. Bruin**, *Modular curves, Arakelov theory, algorithmic applications*, co-supervised with B. Edixhoven, U Leiden.

Master students

- 2021 **D. Ghanshani**, *Homology theories in ABC cofibration categories*, co-supervised with L. Maier.
- 2021 **S. Wolters**, *Algebraic stacks: a comparative introduction*.
- 2021 **N. Maccarini**, *Tropical theta functions for tropical abelian varieties*.
- 2020 **F. Buccoliero**, *Asymptotic height pairing for families of curves with stable degeneration*.
- 2020 **K. van Helden**, *Examples of L_∞ -algebras*, co-supervised with B. Janssens.
- 2019 **A. Prandini**, *On Weyl's construction and Schur–Weyl duality for the symplectic group*.
- 2019 **I. Prosepe**, *Digits of expansions of algebraic numbers*, co-supervised with J.-H. Evertse.
- 2019 **L. van der Sluis**, *Applications of toric geometry to convex polytopes and matroids*.
- 2018 **D. Becker**, *Heights in Arakelov geometry*.
- 2018 **J. W. van Beek**, *The cup product*.
- 2017 **H. Wang**, *Two-variable zeta functions and their properties through covers*.
- 2017 **J. Hekking**, *Segal objects in homotopical categories and K-theory of proto-exact categories*, co-supervised with I. Moerdijk.
- 2016 **F. Giovenzana**, *On the canonical key formula*.
- 2016 **M. Jespers**, *An analogue of Chern-Weil theory for the line bundle of weak Jacobi forms on a non-compact modular surface*.
- 2015 **S. van der Lugt**, *Arakelov intersection theory applied to torsors of semi-stable elliptic curves*.
- 2015 **S. Zarabara**, *Étale cohomology over $\text{Spec}(k)$* .
- 2014 **H. Rohrbach**, *The geometry of the Gauss map and moduli of abelian varieties*.
- 2013 **C. Panda**, *Néron local height functions for elliptic curves*.
- 2013 **J. Commelin**, *Algebraic cycles, Chow motives, and L-functions*.
- 2012 **V. Zakharevich**, *Mixed intermediate jacobians*.
- 2012 **S. Pouwelse**, *Bounds on cohomology by stratifications*.
- 2011 **Y. Achnine**, *On the main conjecture on algebraic geometric MDS codes*.
- 2011 **D. Calliari**, *Reconstruction of cubic surfaces*, co-supervised with R. van Luijk.
- 2010 **N. Sambin**, *Geometric constructions of the irreducible representations of $GL_n(\mathbf{C})$* .
- 2010 **H. Chang**, *Asymptotically good generalized algebraic geometry codes*.
- 2008 **A. Mohajer**, *Algebraic and analytic multiplier ideals and applications*.
- 2008 **R. Jurrius**, *Classifying polynomials of linear codes*, co-supervised with R. Pellikaan.
- 2007 **A. Aryasomayajula**, *Average height of isogenous abelian varieties*.
- 2006 **P. Bruin**, *Green functions on Riemann surfaces and an application to Arakelov theory*, co-supervised with B. Edixhoven.

Bachelor students

- 2022 **A. Colling**, *Homotopy groups of symmetry groups*, co-supervised with A. Achúcarro.
- 2021 **D. Wardell**, *Periodieke automorfismen van oppervlakken en grafen*.
- 2020 **N. Snijder**, *Fundamental groups of topological groups*.
- 2020 **Q. Stehouwer**, *Voronoi polytopes*.

- 2019 **S. Wolters**, *De stelling van de Rham via cohomologie van schoven*.
- 2018 **N. van der Steen**, *Dessins d'enfants*.
- 2018 **S. Maibach**, *Actuating deterministic spin systems*, co-supervised with M. van Hecke.
- 2017 **D. Godding**, *The effective resistance*.
- 2015 **J. W. van Beek**, *De stelling van Borsuk–Ulam*.
- 2014 **M. P. Noordman**, *G-bundles, Čech cohomology and the fundamental group*.
- 2014 **J. Hekking**, *Belyi pairs, dessins d'enfants and hypermaps*.
- 2013 **N. Schoots**, *A categorical approach to varieties over k* .
- 2013 **O. Jaïbi**, *Gaussian curvature and the Gauss–Bonnet theorem*.
- 2012 **S. van der Lugt**, *Projectieve vlakken*.
- 2011 **H. Rohrbach**, *De sluitstelling van Poncelet*.
- 2010 **R. Wols**, *Eindige topologische ruimten*.
- 2010 **R. Hoogwater**, *Potentieel goede reductie van elliptische krommen met een gegeven periodenrooster*.
- 2009 **S. van Lieshout**, *Zariski topology vs. strong topology*.
- 2008 **M. Kusters**, *Schubert calculus*.
- 2005 **R. Jurrius**, *Algebraïsche topologie en de Lefschetz fixpuntstelling*.

High school students (Pre-University College)

- 2009 **E. Nandorfi, J. Wagenaar**, *On elliptic curves and Mordell's theorem*.
- 2009 **J. Groeneweg, L. Meekes**, *Binaire codes*.
- 2008 **J. Leuven, L. van Steijn**, *Bewaakte polygonen*.
- 2008 **S. Polak, T. Rijken**, *De abc-stelling voor polynomen met complexe coëfficiënten*.
- 2007 **T. Foppen, N. Goet, K. de Jong**, *De gulden snede*.
- 2006 **H. Rohrbach, T. van der Peet**, *Elliptische krommen*.
- 2005 **J. Hootsmans, C. Schoenbach**, *Twee vreemde ruimtevullers*.

Courses taught (U Leiden, unless otherwise stated)

- 2022 **Algebraic Geometry 2**, *national graduate course*, (with C. Faber).
- 2021 **Inleiding in de Algebraïsche Topologie**, *undergraduate course*, (with S. van der Lugt).
- 2021 **Algebraic Geometry 2**, *national graduate course*, (with C. Faber).
- 2021 **Bachelorseminarium Algebra, Getaltheorie en Meetkunde**, *undergraduate seminar*, (with H.W. Lenstra).
- 2020 **Inleiding in de Algebraïsche Topologie**, *undergraduate course*, (with S. van der Lugt).
- 2020 **Algebraic Geometry 2**, *national graduate course*, (with C. Faber).
- 2020 **Bachelorseminarium Algebra, Getaltheorie en Meetkunde**, *undergraduate seminar*, (with H.W. Lenstra).
- 2019 **Inleiding in de Algebraïsche Topologie**, *undergraduate course*.
- 2019 **Algebraic Geometry 2**, *national graduate course*, (with C. Faber).
- 2019 **Bachelorseminarium Algebra, Getaltheorie en Meetkunde**, *undergraduate seminar*, (with H.W. Lenstra).
- 2018 **Inleiding in de Algebraïsche Topologie**, *undergraduate course*.
- 2018 **Algebraic Geometry 2**, *national graduate course*, (with C. Faber).
- 2018 **Bachelorseminarium Algebra, Getaltheorie en Meetkunde**, *undergraduate seminar*, (with H.W. Lenstra).
- 2017 **Inleiding in de Algebraïsche Topologie**, *undergraduate course*.

- 2017 **Bachelorseminarium Algebra, Getaltheorie en Meetkunde**, *undergraduate seminar*, (with H.W. Lenstra).
- 2016 **Bachelorseminarium Algebra, Getaltheorie en Meetkunde**, *undergraduate seminar*, (with H.W. Lenstra).
- 2016 **Algebraic Geometry**, *national graduate course*, (with D. Holmes).
- 2016 **Algebraic Geometry**, *national graduate course*, (with D. Holmes).
- 2016 **Lineaire Algebra voor Informatica en Economie**, *undergraduate service course*.
- 2016 **Continue Wiskunde voor Informatica en Economie**, *undergraduate service course*.
- 2015 **Bachelorseminarium Algebra, Getaltheorie en Meetkunde**, *undergraduate seminar*, (with H.W. Lenstra).
- 2015 **Continue Wiskunde voor Informatica en Economie**, *undergraduate service course*.
- 2015 **Lineaire Algebra voor Informatica en Economie**, *undergraduate service course*.
- 2014 **Advanced Algebraic Geometry**, *national graduate course*, (with L. Taelman).
- 2014 **Continue Wiskunde voor Informatica en Economie**, *undergraduate service course*.
- 2014 **Algebraic Geometry**, *national graduate course*, (with B. Moonen).
- 2013 **Wiskundige Structuren**, *undergraduate course*.
- 2013 **Introduction to Algebraic Topology**, *undergraduate course*.
- 2013 **Lineaire Algebra voor Natuur- en Sterrenkunde**, *undergraduate course*.
- 2012 **Algebraic Geometry**, *national graduate course*, (with L. Taelman).
- 2012 **Wiskundige Structuren**, *undergraduate course*.
- 2012 **Reading course Complex Geometry**, *graduate course*.
- 2012 **Lineaire Algebra voor Natuur- en Sterrenkunde**, *undergraduate course*.
- 2012 **Reading course Intersection Theory**, *graduate course*.
- 2012 **Calculus A**, *undergraduate service course*.
- 2011 **Introduction to Algebraic Topology**, *undergraduate course*.
- 2011 **Lineaire Algebra voor Natuur- en Sterrenkunde**, *undergraduate course*.
- 2011 **Coderingstheorie**, *undergraduate course*.
- 2010 **Jacobians and Theta Functions**, *graduate course, MRI master class*.
- 2010 **Algebra 3**, *undergraduate course*.
- 2010 **Coderingstheorie**, *undergraduate course*.
- 2009 **Topics in Geometry**, *undergraduate course*.
- 2008 **Topics in Geometry**, *undergraduate course*.
- 2008 **Wiskunde 1A voor BFW/LST**, *undergraduate service course*.
- 2007 **Topics in Geometry**, *undergraduate course*.
- 2007 **Wiskunde 1A voor BFW/LST**, *undergraduate service course*.
- 2006 **Topics in Geometry**, *undergraduate course*.
- 2006 **Wiskunde 1A voor BFW/LST**, *undergraduate service course*.
- 2006 **Complexe Analyse voor LAV-1**, *service course for teachers*.
- 2006 **Algebra 3**, *undergraduate course*.
- 2005 **Wiskunde 1A voor BFW/LST**, *undergraduate service course*.
- 2005 **Topologie**, *undergraduate course*.

[Other educational activities](#)

Numerous PhD defense committees, numerous master thesis committees, all bachelor thesis committees in Algebra, Geometry and Number Theory since 2015, numerous guest lessons at high schools, various preparatory lessons for participants in research visits organized by study association De Leidsche Flesch, various lessons in Pre-University College

Lecture series at summer and winter schools

- 2016 **5th Swiss-French workshop on Algebraic Geometry**, *Lecture series on the arithmetic Riemann–Roch theorem*, Charmey, Switzerland.
- 2005 **Summer school Number fields and curves over finite fields**, *Lectures on arithmetic intersection theory*, Anogia, Crete.

Workshop and conference talks

- 2021 **Workshop Moduli and Algebraic Cycles**, *Mittag-Leffler Institute*.
- 2021 **Arakelov geometry workshop**, *U Regensburg*.
- 2019 **Workshop on Discrete Geometry with a view towards Symplectic and Tropical Geometry**, *U Cologne*.
- 2019 **SIAM Conference on Applied Algebraic Geometry**, *U Bern*.
- 2018 **Intercity Seminar Arakelov Geometry**, *U Copenhagen*.
- 2016 **Conference Arakelov Geometry: archimedean and non-archimedean aspects**, *U Regensburg*.
- 2016 **Workshop on generalizations of A^1 -homotopy invariance in algebraic geometry and homotopy theory**, *Zinnowitz-Usedom*.
- 2013 **BIRS workshop Integrable systems and moduli spaces**, *Banff*.
- 2013 **Advances in Teichmüller theory**, *ESI Vienna*.
- 2012 **Heraeus Seminar Algebro-geometric methods in fundamental physics**, *Physikzentrum Bad Honnef*.
- 2012 **Seminar Galois covers and deformations**, *U Bordeaux*.
- 2011 **Algebro-geometric methods in gauge theory and general relativity**, *Hanse Institute for Advanced Study, Delmenhorst*.
- 2011 **Research program Moduli spaces of Riemann surfaces**, *Park City*.
- 2011 **Conference Heights 2011**, *Tossa de Mar*.
- 2010 **Workshop Arakelov theory and arithmetical applications**, *U Regensburg*.
- 2009 **Arithmétique, géométrie, cryptographie et théorie des codes**, *CIRM, Luminy*.
- 2008 **Journées de géométrie d'Arakelov à Rennes**, *Rennes*.
- 2008 **Conference Moduli spaces**, *U Warwick*.
- 2008 **Conference Moduli spaces**, *Max Planck Institut für Mathematik, Bonn*.
- 2007 **Conference Effective aspects of complex hyperbolic varieties**, *Brest*.
- 2006 **Conference on Modular Forms**, *Schiermonnikoog Island*.
- 2006 **Workshop Abelian varieties**, *U Amsterdam*.
- 2005 **Conference Arakelov geometry**, *Oberwolfach*.
- 2005 **Conference Explicit algebraic number theory**, *Oberwolfach*.
- 2004 **Conference Analogy between number fields and function fields**, *Texel Island*.

Seminar and colloquium talks

- 2022 **Number theory seminar**, *U Groningen*.
- 2021 **Oberseminar Algebraische Geometrie**, *U Hannover*.

- 2019 **Number Theory Seminar**, *U Caen*.
- 2019 **Symmetries and Correspondences workshop**, *U Nottingham*.
- 2018 **SFB Kolloquium Periods, moduli and arithmetic of algebraic varieties**, *U Mainz*.
- 2018 **Kolloquium Arakelov Geometrie**, *U Regensburg*.
- 2018 **Arithmetic geometry seminar**, *HU Berlin*.
- 2017 **Number theory seminar**, *TU Darmstadt*.
- 2017 **Intercity Number Theory Seminar**, *U Leiden*.
- 2017 **Number theory seminar**, *Université de Bordeaux*.
- 2016 **General colloquium**, *VU Amsterdam*.
- 2016 **Number theory seminar**, *U Copenhagen*.
- 2016 **Summer School Current trends in algebraic and arithmetic geometry**, *Vlieland Island*.
- 2014 **Research trimester on multiple zeta values, multiple polylogarithms and quantum field theory**, *ICMAT Madrid*.
- 2014 **Intercity seminar Arakelov Geometry**, *U Rome*.
- 2014 **Number theory seminar**, *Adam Mickiewicz U, Poznań*.
- 2014 **Locally free seminar**, *U Amsterdam*.
- 2013 **GAGA seminar**, *U Utrecht*.
- 2013 **Paris-Kyoto-Barcelona Arakelov geometry seminar**, *Paris*.
- 2013 **NoGAGS seminar**, *Hannover*.
- 2013 **Seminar aritmetische Geometrie und Zahlentheorie**, *U Hamburg*.
- 2013 **Séminaire Autour de la Géométrie d'Arakelov**, *U Paris VI*.
- 2011 **Seminar Graduiertenkolleg Curvature, cycles, cohomology**, *U Regensburg*.
- 2010 **Intercity seminar Algebraic Geometry**, *U Amsterdam*.
- 2010 **Intercity seminar Algebraic Geometry**, *U Leiden*.
- 2010 **EIDMA Seminar Combinatorial Theory**, *TU Eindhoven*.
- 2010 **DIAMANT symposium**, *Nunspeet*.
- 2010 **Séminaire de Théorie des Nombres**, *U Paris VI*.
- 2009 **Intercity seminar Number Theory**, *U Groningen*.
- 2009 **Algebra and Geometry seminar**, *U Amsterdam*.
- 2009 **Number Theory seminar**, *Institut Fourier, Université Grenoble I, Grenoble*.
- 2009 **Number Theory seminar**, *Max Planck Institut für Mathematik, Bonn*.
- 2008 **Intercity Seminar on the Fundamental Lemma**, *Utrecht*.
- 2007 **Seminar of the Mittag-Leffler Institute**, *Stockholm*.
- 2006 **Arithmetik und Geometrie Seminar**, *Humboldt U, Berlin*.
- 2006 **Lunch colloquium Faculty of Science**, *Leiden*.
- 2006 **Lunch colloquium De Leidsche Flesch**, *Leiden*.
- 2005 **Intercity Seminar on Khare's work on Serre's conjecture**, *Nijmegen*.
- 2005 **General colloquium**, *U Leiden*.
- 2005 **Séminaire Autour de la Géométrie d'Arakelov**, *U Paris VI*.
- 2005 **Number Theory seminar**, *UPC Barcelona*.
- 2005 **Intercity seminar Number Theory**, *U Leiden*.
- 2005 **Seminario di Teorie dei numeri**, *Roma Tor Vergata*.
- 2004 **General colloquium**, *U Amsterdam*.
- 2004 **Arithmetik und Geometrie Seminar**, *Humboldt U, Berlin*.
- 2004 **Number Theory Seminar**, *ETH, Zürich*.

2002 **Intercity seminar on Hodge Theory**, *RU Nijmegen*.

Seminars and conferences organized

- 2018 **Effective methods for Diophantine problems**, *co-organized with A. Bérczes, B. Edixhoven and K. Györy*, workshop in honor of the 60th birthday of Jan Hendrik Evertse, Lorentz Center, Leiden.
- 2013 **Heights and moduli spaces**, *co-organized with with G. Freixas i Montplet and G. van der Geer*, workshop, Lorentz Center, Leiden.
- 2010 **Geometry and Arithmetic**, *co-organized with C. Faber and G. Farkas*, workshop in honor of the 60th birthday of Gerard van der Geer, Schiermonnikoog Island.
- 2010 **Functorial compactification of moduli of abelian varieties**, *co-organized with J. Heinloth*, Intercity Seminar Algebraic Geometry, on rotating venues in The Netherlands.

Research visits (two months or longer)

- 2004 **Institut des Hautes Études Scientifiques**, *Paris*.
- 2007 **Mittag-Leffler Institute**, *Stockholm*.
- 2009 **Max Planck Institut für Mathematik**, *Bonn*.

Academic service

- 2021– **Section representative of the Algebra, Geometry and Number theory group**.
- 2019– **Board member of research cluster Diamant**.
- 2013– **Member of the Mathematics BSc admissions committee**.
- 2013– **Member of the reading committee of 3 PhD theses**.
A. Aryasomayajula (Humboldt U Berlin), W. Zhuang (U Leiden), J. Liu (U Leiden)
- 2008– **Member of the opposition committee in 14 PhD defenses**.
- 2005– **Referee for 17 journals and 2 conference proceedings**.
Journals include: *Algebra and Number Theory*, *Algebraic Geometry*, *Annales de l'ENS*, *Annals of Mathematics*, *Commentarii Mathematici Helvetici*, *Compositio Mathematica*, *Crelle*, *Duke Mathematical Journal*, *Forum Mathematics Pi*, *International Journal of Number Theory*, *Inventiones Mathematicae*, *Mathematics of Computation*, *Proceedings of the American Mathematical Society*, *Proceedings of the London Mathematical Society*; in some cases multiple times
- 2010–2021 **Chair of the Leiden Mathematical Institute's PR committee**.
- 2005–2021 **Member of the Leiden Mathematical Institute's PR committee**.
Organizing and taking part in publicity events for high school and bachelor students
- 2005–2020 **Reviewer for MathSciNet**.
98 reviews as of September 2020
- 2019 **Assessment committee NWO-VENI**.
- 2014 **Member of the hiring committee for a tenure track position at TU Delft**.
- 2013–2016 **PI of the International Graduate School "Moduli and Automorphic Forms: Arithmetic and Geometric Aspects"**.
Involving *U Leiden*, *U Amsterdam*, *Humboldt U Berlin*, *Freie U Berlin*
- 2010–2019 **Research manager of the Diamant cluster**.
Administration of the cluster, secretarial work for Diamant hiring committees, organization of semi-annual Diamant symposium, organization of yearly Diamant minisymposium at Dutch Mathematical Congress, maintainer of the cluster's webpages