Wadim Zudilin

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Education

- **Moscow Lomonosov State University**, Moscow, Russia (1987–1995)
  - MSc in Pure and Applied Mathematics (25 June 1992)
  - PhD in Mathematics (1 December 1995)
    Thesis titled "On the estimates of the measure of linear independence for values of certain analytical functions", written under the supervision of Prof. Yu. V. Nesterenko
  - DSc (habilitation) in Mathematics (20 June 2014)
    Thesis titled "Apéry's theorem and problems for the values of Riemann's zeta function and their q-analogues"

Extended research visits

- **Centre É. Borel**, Institut H. Poincaré, Paris;
  Institut de Mathématiques de Jussieu, Université Paris 6 (1999)
  - Post-doctoral position supported by Ostrowski Fellowship
- **Mathematisches Institut** der Universität zu Köln (2003)
  - Research position supported by Alexander von Humboldt Foundation
- **Max-Planck-Institut für Mathematik**, Bonn (February–April 2006; April–July 2007; September–October 2007; August 2008–February 2009)
  - Research positions supported by the Max Planck Society
- **Hausdorff Center for Mathematics**, Bonn (April–May 2009)
  - Research position

Employment

- **Radboud University Nijmegen**, Professor (September 2017–present)
  Includes
  - teaching and supervision of under- and postgraduate students

  - research performance
- **The University of Newcastle**, Associate Professor (June 2009–June 2013), Professor (July 2013–July 2017),
  Conjoint Professor, research only (August 2017–July 2018)
- **Moscow Lomonosov State University**, Assistant Professor (June 1996–August 2000), Associate Professor (September 2000–August 2007)
- **Steklov Mathematical Institute**, Russian Academy of Sciences, Senior Researcher (May 2006–May 2008)
- **Informational and Publishing Sector**, Russian Academy of Sciences (1995–August 2008)

Honours, awards and grants

- *Award of Young Scientists' Competition*, Moscow Lomonosov State University (1997)
- *Post-doctoral Fellowship*, Ostrowski Foundation (1999)
- *National Fellowship*, Russian Academy of Sciences (2000–2003)
- *The Distinguished Award of the Hardy–Ramanujan Society*, Hardy–Ramanujan Society (2001)
- *Research Fellowship*, Alexander von Humboldt Foundation (2003)
- *Research Fellowship*, Max-Planck-Institut für Mathematik, Bonn (February 1–April 30, 2006)
- *Award of the Competition to Support Talented Students, Graduates and Young Scientists of the Moscow University*, Moscow Lomonosov State University (2006)
- *Research Fellowship*, Max-Planck-Institut für Mathematik, Bonn (April 1–July 31 & August 30–October 31, 2007)
- *Research Fellowship*, Max-Planck-Institut für Mathematik, Bonn (August 1, 2008–February 28, 2009)
- *Discovery Project* DP110104419: *Arithmetic hypergeometric series*, Australian Research Council (January 2011–December 2013)
- *Discovery Project* DP140101186: *Elliptic special functions*, joint with S. Ole Warnaar, Australian Research Council (January 2014–December 2016)
- 2014 *G. de B. Robinson Award* for the publication "Densities of short uniform random walks, with an appendix by D. Zagier" in the *Canadian Journal of Mathematics*, joint with J. M. Borwein, A. Straub and J. Wan, Canadian Mathematical Society (December 2014)
- 2019 *NWO Open Competition ENW KLEIN Grant* OCENW.KLEIN.006: *The Mahler measure: a lasting symphony* (December 2019–July 2024)

Editorial duties

- **Integral Transforms and Special Functions** (ISSN: 1065-2469), member of the Editorial Board (2013–present)
- **Journal of Algebraic Combinatorics** (ISSN: 0925-9899), Associate Editor (2018–present)
- **Results in Mathematics** (ISSN: 1422-6383), Associate Editor (2023–present)
- **Monographs in Number Theory** (ISSN: 1793-8341), Associate Editor (2008–2013), Series Editor (2013–present)
- **NIST Digital Library of Mathematical Functions**, Associate Editor for the Chapter on *Zeta and Related Functions* (2015–present)
- **Ramanujan Journal** (ISSN: 1382-4090), Associate Editor (2018–2022)
- **International Journal of Number Theory** (ISSN: 1793-0421), Associate Editor (2009–2011, 2014–2020)
- **Bulletin of the Australian Mathematical Society** (ISSN: 0004-9727), Associate Editor (2013–2017)
- **Journal of the Australian Mathematical Society** (ISSN: 1446-7887), Associate Editor (2013–2017)

Prize committees

- **SASTRA Ramanujan Prize**, Committee member (2023 & 2024)
- **Mahler Lectureship** of the Australian Mathematical Society, Committee member (2012–2013) & chair (2014–2015)

PhD students

- Jesús Guillera Goyanes, *Series de Ramanujan: Generalizaciones y conjeturas* (*Ramanujan's series: Generalizations and conjectures*), Facultad de Ciencias, Departamento de Matemáticas, Universidad de Zaragoza (Zaragoza, Spain, 2 July 2007)
- Igor P. Rochev, *Arithmetic properties of values of certain analytic functions*, Department of Mechanics and Mathematics, Moscow Lomonosov State University (Moscow, Russia, 18 February 2011)
- Yuri A. Pupyrev, *Arithmetic applications of the theory of hypergeometric series*, Department of Mechanics and Mathematics, Moscow Lomonosov State University (Moscow, Russia, 18 February 2011)
- James Wan, *Random walks, elliptic integrals and related constants*, School of Mathematical and Physical Sciences, The University of Newcastle (Newcastle,

NSW, Australia, 19 March 2013)

- Daniel Sutherland, *Arithmetic applications of Hankel determinants*, School of Mathematical and Physical Sciences, The University of Newcastle (Newcastle, NSW, Australia, 13 February 2015)
- Berend Ringeling, *Mahler measures, modular forms and hypergeometric functions*, Institute for Mathematics, Astrophysics and Particle Physics, Radboud University (Nijmegen, Netherlands, 23 October 2023)
- Current PhD students (Radboud University, Netherlands):
  Daniel Waters (expected completion: January 2025)

Teaching experience

- **Moscow Lomonosov State University** (Fall 1996–Spring 2007)
  - *Real Analysis*, Department of Mechanics and Mathematics (four semesters)
  - *Number Theory*, Department of Mechanics and Mathematics (one semester)
  - *Number Theory for Economists*, Department of Mechanics and Mathematics (one semester)
  - Special course on *Basic Number Theory*, Department of Mechanics and Mathematics (one semester)
  - Special course on *Continued Fractions*, Department of Mechanics and Mathematics (one semester)
  - Special course on *Modular Forms*, Department of Mechanics and Mathematics (one semester)
  - Special course on *Hypergeometric Functions*, Department of Mechanics and Mathematics (one semester)
  - Special course on *Hypergeometric Identities*, Department of Mechanics and Mathematics (one semester)
  - *Calculus I*, *Analytic Geometry*, *Linear Algebra*, and *Differential Equations*, Department of Chemistry (three semesters)
  - *Equations of Mathematical Physics*, Department of Geology (one semester)
  - *Engineering Calculus I, II and III*, Department of Mechanics and Mathematics, Engineering Division (four semesters)
  - *Engineering Calculus I*, Department of Biology (two semesters)
- **University of Newcastle** (2009–2017)
  - Honours course on *Continued Fractions* (1st semester 2009)
  - MATH2320: *Linear algebra* (2nd semester 2009 & 2013 & 2014)
  - MATH3700: *Differential equations* (2nd semester 2009 & 1st semester 2017)
  - Honours course on *Modular Forms* (1st semester 2010)
  - MATH2330: *Analysis* (1st semester 2010 & 2011 & 2012 & 2016 & 2017)
  - MATH3170: *Number Theory* (1st semester 2010 & 2011 & 2nd semester 2012 & 2013 & 2014 & 2015)
  - MATH2420: *Engineering Mathematics* (2nd semester 2010 & 2011 & 2012)
  - MATH3242: *Complex Analysis* (2nd semester 2010 & 2011 & 2012)
  - Honours course on *Multiple Zeta Values* (2nd semester 2011)
  - MATH1220: *Mathematical Discovery 2* (2nd semester 2012 & 2015)
  - Honours course on *Transcendental Numbers* (2nd semester 2013)
  - MATH3510: *Combinatorics and Graph Theory* (1st semester 2016)

- **Radboud University Nijmegen** (2017–present)
  - NWI-WB001B: *Analysis 2* (Fall 2017 & 2018 & 2019 & 2020 & 2021)
  - NWI-WM139: Master course on *Analytic Methods in Number Theory* (Fall 2017 & 2019 & 2021 & 2024)
  - NWI-NB019C: *Complex Functions* (Spring 2018 & 2024)
  - MasterMath (Utrecht U): *p-Adic Numbers* (Fall 2018), with Rob de Jeu; MasterMath (Radboud U): *p-Adic Numbers* (Fall 2022)
  - NWI-WB093: *Complex Analysis* (Spring 2019 & 2020 & 2021 & 2022 & 2024)
  - MasterMath (Radboud U): *Multiple Zeta Functions* (Spring 2019)
  - NWI-WM158: Master course on *Experimental Mathematics* (Fall 2020 & 2022)
  - NWI-WP025: *Calculus A* (Fall 2023 & 2024)

Books

[1] J. M. Borwein, I. Shparlinski and W. Zudilin (eds.), *Number Theory and Related Fields, In memory of Alf van der Poorten*, Springer Proceedings in Math. & Stat. **43** (2013), Springer.

[2] J. M. Borwein, A. van der Poorten, J. Shallit and W. Zudilin, *Neverending Fractions: An Introduction to Continued Fractions*, Australian Math. Soc. Lecture Series **23** (2014), Cambridge University Press.

[3] F. Brunault and W. Zudilin, *Many Variations of Mahler Measures: A Lasting Symphony*, Australian Math. Soc. Lecture Series **28** (2020), Cambridge University Press.

[4] W. Zudilin, *Analytic Methods in Number Theory: When Complex Numbers Count*, Monographs in Number Theory **11** (2023), World Scientific.

Publications

[1] *On rational approximations of values of a certain class of entire functions*, Mat. Sb. **186**:4 (1995), 89–124; English transl., Russian Acad. Sci. Sb. Math. **186**:4 (1995), 555–590.

[2] *On a measure of irrationality for values of G-functions*, Izv. Ross. Akad. Nauk Ser. Mat. **60**:1 (1996), 87–114; English transl., Russian Acad. Sci. Izv. Math. **60**:1 (1996), 91–118.

[3] *On algebraic structure of functional matrices of special form*, Mat. Zametki **60**:6 (1996), 851–860; English transl., Math. Notes **60**:6 (1996), 642–648.

[4] *Lower bounds for polynomials in the values of certain entire functions*, Mat. Sb. **187**:12 (1996), 57–86; English transl., Russian Acad. Sci. Sb. Math. **187**:12 (1996), 1791–1818.

[5] *On the measure of linear and algebraic independence for values of entire hypergeometric functions*, Mat. Zametki **61**:2 (1997), 302–304; English transl., Math. Notes **61**:2 (1997), 246–248.

[6] *Recurrent sequences and the measure of irrationality of values of elliptic integrals*, Mat. Zametki **61**:5 (1997), 785–789; English transl., Math. Notes **61**:5 (1997), 657–661.

[7] *Difference equations and the irrationality measure of numbers*, Analytic Number Theory and Applications, Collection of Papers, Trudy Mat. Inst. Steklov **218** (1997), 165–178; English transl., Proc. Steklov Inst. Math. **218** (1997), 160–174.

[8] *Thetanulls and differential equations*, Mat. Sb. **191**:12 (2000), 77–122; English transl., Russian Acad. Sci. Sb. Math. **191**:12 (2000), 1827–1871.

[9] *Cancellation of factorials*, Mat. Sb. **192**:8 (2001), 95–122; English transl., Russian Acad. Sci. Sb. Math. **192**:8 (2001), 1181–1207; `http://arXiv.org/abs/math/0008017`.

[10] *On the transcendence degree of the differential field generated by Siegel modular forms*, with D. Bertrand, J. Reine Angew. Math. (Crelles Journal) **554** (January 2003), 47–68; Prépubl. de l'Institut de Math. de Jussieu, no. 248 (March 2000); `http://arXiv.org/abs/math/0006176`.

[11] *The hypergeometric equation and Ramanujan functions*, Ramanujan J. **7**:4 (2003), 435–447.

[12] *Transcendence problems of the mirror* (*Number theory casting a look at the mirror*), to A. B. Shidlovskiĭ on the occasion of his 85th birthday, Preprint, 17 pp.; `http://arXiv.org/abs/math/0008237`.

[13] *Integrality of power expansions related to hypergeometric series*, Mat. Zametki **71**:5 (2002), 662–676; English transl., Math. Notes **71**:5 (2002), 604–616.

[14] *Derivatives of Siegel modular forms and exponential functions*, with D. Bertrand, Izv. Ross. Akad. Nauk Ser. Mat. **65**:4 (2001), 21–34; English transl., Russian Acad. Sci. Izv. Math. **65**:4 (2001), 659–671; Prépubl. de l'Institut de Math. de Jussieu, no. 280 (March 2001).

[15] *On irrationality of values of zeta function at odd points*, Uspekhi Mat. Nauk **56**:2 (2001), 215–216; English transl., Russian Math. Surveys **56**:2 (2001), 423–424.

[16] *Irrationality of values of zeta-function*, Contemporary Research in Mathematics and Mechanics, Proceedings of the XXIII Conference of Young Scientists of the Department of Mechanics and Mathematics (Moscow State University, April 9–14, 2001), Moscow, Publ. Dept. Mech. Math. MSU, 2001, Part 2, 127–135; English transl., arXiv.org e-Print archive, `http://arXiv.org/abs/math/0104249`, 8+8 pp.

[17] *Irrationality of values of the Riemann zeta function*, Izv. Ross. Akad. Nauk Ser. Mat. **66**:3 (2002), 49–102; English transl., Russian Acad. Sci. Izv. Math. **66**:3 (2002), 489–542.

[18] *One of the eight numbers* $\zeta(5), \zeta(7), \ldots, \zeta(17), \zeta(19)$ *is irrational*, Mat. Zametki **70**:3 (2001), 472–476; English transl., Math. Notes **70**:3 (2001), 426–431.

[19] *Arithmetic of linear forms involving odd zeta values*, J. Théorie Nombres Bordeaux **16**:1 (2004), 251–291; `http://arXiv.org/abs/math/0206176`.

[20] *One of the numbers* $\zeta(5)$, $\zeta(7)$, $\zeta(9)$, $\zeta(11)$ *is irrational*, Uspekhi Mat. Nauk **56**:4 (2001), 149–150; English transl., Russian Math. Surveys **56**:4 (2001), 774–776.

[21] *One parameter models of Hopf algebras assosiated with multiple zeta values*, Preprint (June 16, 2001), 11 pp.

[22] *Remarks on irrationality of q-harmonic series*, Manuscripta Math. **107**:4 (2002), 463–477.

[23] *Algebraic relations for multiple zeta values*, Uspekhi Mat. Nauk **58**:1 (2003), 3–32; English transl., Russian Math. Surveys **58**:1 (2003), 1–29.

[24] *On the irrationality of* $\zeta_q(2)$, Uspekhi Mat. Nauk **56**:6 (2001), 147–148; English transl., Russian Math. Surveys **56**:6 (2001), 1183–1185.

[25] *On the irrationality measure for a q-analogue of* $\zeta(2)$, Mat. Sb. **193**:8 (2002), 49–70; English transl., Russian Acad. Sci. Sb. Math. **193**:8 (2002), 1151–1172.

[26] *Diophantine properties of numbers related to Catalan's constant*, with T. Rivoal, Mathematische Annalen **326**:4 (2003), 705–721; Prépubl. de l'Institut de Math. de Jussieu, no. 315 (January 2002).

[27] *An Apéry-like difference equation for Catalan's constant*, The Electronic Journal of Combinatorics **10**:1 (2003), #R14, 10 pp.; `http://arXiv.org/abs/math/0201024`.

[28] *Well-poised hypergeometric service for diophantine problems of zeta values*, Actes des 12èmes rencontres arithmétiques de Caen (June 29–30, 2001), J. Théorie Nombres Bordeaux **15**:2 (2003), 593–626.

[29] *An elementary proof of Apéry's theorem*, Preprint (February 17, 2002), 8 pp.; `http://arXiv.org/abs/math/0202159`;
Apéry's theorem. Thirty years after, Intern. J. Math. Computer Sci. **4**:1 (2009), 9–19.

[30] *Very well-poised hypergeometric series and multiple integrals*, Uspekhi Mat. Nauk **57**:4 (2002), 177–178; English transl., Russian Math. Surveys **57**:4 (2002), 824–826;
Multiple-integral representations of very-well-poised hypergeometric series, An extract from my contribution [28], Preprint (March 17, 2002), 8 pp.; `http://arXiv.org/abs/math/0206177`.

[31] *Heine's basic transform and a permutation group for q-harmonic series*, Acta Arith. **111**:2 (2004), 153–164.

[32] *A third-order Apéry-like recursion for* $\zeta(5)$, Mat. Zametki **72**:5 (2002), 796–800; English transl., Math. Notes **72**:5 (2002), 733–737; `http://arXiv.org/abs/math/0206178`.

[33] *Diophantine problems for q-zeta values*, Mat. Zametki **72**:6 (2002), 936–940; English transl., Math. Notes **72**:6 (2002), 858–862; `http://arXiv.org/abs/math/0206179`.

[34] *Baker-type estimates for linear forms in the values of q-series*, with K. Väänänen, Canad. Math. Bull. **48**:1 (2005), 147–160.

[35] *A few remarks on linear forms involving Catalan's constant*, to N. M. Korobov on the occasion of his 85th birthday, Chebyshevskiĭ Sb. (Tula State Pedagogical University) **3**:2 (4) (2002), 60–70; English transl., arXiv.org e-Print archive, `http://arXiv.org/abs/math/0210423`.

[36] *On the functional transcendence of q-zeta values*, Mat. Zametki **73**:4 (2003), 629–630; English transl., Math. Notes **73**:4 (2003), 588–589.

[37] *Euler's constant, q-logarithms, and formulas of Ramanujan and Gosper*, with J. Sondow, Ramanujan J. **12**:2 (2006), 225–244;
An extended version, Preprint (March 2003), 23 pp., `http://arXiv.org/abs/math/0304021`.

[38] *Well-poised hypergeometric transformations of Euler-type multiple integrals*, J. London Math. Soc. (2) **70**:1 (2004), 215–230.

[39] *Well-poised generation of Apéry-like recursions*, Proceedings of the 7th OPSFA (Copenhagen, August 18–22, 2003), J. Comput. Appl. Math. **178**:1–2 (2005), 513–521; `http://arXiv.org/abs/math/0307058`.

[40] *New irrationality measures for q-logarithms*, with T. Matala-aho and K. Väänänen, Mathematics of Computation **75** (2006), no. 254, 879–889.

[41] *On a combinatorial problem of Asmus Schmidt*, The Electronic Journal of Combinatorics **11**:1 (2004), #R22, 8 pp.; `http://arXiv.org/abs/math/0311195`.

[42] *Séries hypergéométriques basiques, q-analogues des valeurs de la fonction zêta et formes modulaires*, with C. Krattenthaler and T. Rivoal, J. Inst. Math. Jussieu **5**:1 (2006), 53–79; `http://arXiv.org/abs/math/0311033`.

[43] *On theorems of Gelfond and Selberg concerning integral-valued entire functions*, with P. Bundschuh, J. Approximation Theory **130**:2 (2004), 164–178.

[44] *Binomial sums related to rational approximations to* $\zeta(4)$, Mat. Zametki **75**:4 (2004), 637–640; English transl., Math. Notes **75**:4 (2004), 594–597; `http://arXiv.org/abs/math/0311196`.

[45] *An essay on irrationality measures of* π *and other logarithms*, Chebyshevskiĭ Sb. (Tula State Pedagogical University) **5**:2 (2004), 49–65; English transl., arXiv.org e-Print archive, `http://arXiv.org/abs/math/0404523`.

[46] *Differential equations, mirror maps and zeta values*, with G. Almkvist, Mirror Symmetry V, N. Yui, S.-T. Yau, and J. D. Lewis (eds.), AMS/IP Studies in Advanced Mathematics **38** (2007), International Press & Amer. Math. Soc., 481–515; `http://arXiv.org/abs/math/0402386`.

[47] *The inverse Legendre transform of a certain family of sequences*, Mat. Zametki **76**:2 (2004), 300–303; English transl., Math. Notes **76**:2 (2004), 276–279.

[48] *Rational approximations to a q-analogue of π and some other q-series*, with P. Bundschuh, in "Diophantine Approximation", Proceedings of the 70th birthday conference in honour of W. M. Schmidt (Vienna, November 2003), H.-P. Schlickewei, K. Schmidt, and R. F. Tichy (eds.), Developments in Mathematics **16** (2008), Vienna, Springer-Verlag, 123–139.

[49] *Ramanujan-type formulae and irrationality measures of certain multiples of π*, Mat. Sb. **196**:7 (2005), 51–66; English transl., Russian Acad. Sci. Sb. Math. **196**:7 (2005), 983–998.

[50] *Approximations to -, di- and tri- logarithms*, J. Comput. Appl. Math. **202**:2 (2007), 450–459; `http://arXiv.org/abs/math/0409023`.

[51] *An elementary proof of the irrationality of Tschakaloff series*, to A. B. Shidlovskiĭ on the occasion of his 90th birthday, Fundam. Prikl. Mat. **11**:6 (2005), 59–64; English transl., J. Math. Sci. **146**:2 (2007), 5669–5673; `http://arXiv.org/abs/math/0506086`.

[52] *Computing powers of two generalizations of the logarithm*, Séminaire Lotharingien de Combinatoire **53** (2005), Article B53c, 6 pp.

[53] *Approximations to q-logarithms and q-dilogarithms, with applications to q-zeta values*, a special volume dedicated to the 90th anniversary of Yu. V. Linnik, Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI) **322** (2005), 107–124; Reprinted, J. Math. Sci. **137**:2 (2006), 4673–4683.

[54] *Irrationality of certain numbers that contain values of the di- and trilogarithm*, with Kh. Hessami Pilehrood and T. Hessami Pilehrood, Math. Zeitschrift **254**:2 (2006), 299–313.

[55] *Irrationality measures for certain q-mathematical constants*, with P. Bundschuh, Math. Scand. **101**:1 (2007), 104–122.

[56] *A new lower bound for $\|(3/2)^k\|$*, Proceedings of the 24th Journées Arithmétiques (Marseille, July 4–8, 2005), J. Théorie Nombres Bordeaux **19**:1 (2007), 313–325.

[57] *Tables of Calabi–Yau equations*, with G. Almkvist, C. van Enckevort and D. van Straten, Preprint (July 2005), 104 pp.; `http://arXiv.org/abs/math/0507430`.

[58] *Quadratic transformations and Guillera's formulae for $1/\pi^2$*, Mat. Zametki **81**:3 (2007), 335–340; English transl., Math. Notes **81**:3 (2007), 297–301; `http://arXiv.org/abs/math/0509465`.

[59] *Linear independence of values of Tschakaloff series*, with K. Väänänen, Uspekhi Mat. Nauk **62**:1 (2007), 197–198; English transl., Russian Math. Surveys **62**:1 (2007), 196–198.

[60] *More Ramanujan-type formulae for* $1/\pi^2$, Uspekhi Mat. Nauk **62**:3 (2007), 211–212; English transl., Russian Math. Surveys **62**:3 (2007), 634–636.

[61] *Linear independence of values of Tschakaloff functions with different parameters*, with K. Väänänen, J. Number Theory **128**:9 (2008), 2549–2558.

[62] *Ramanujan-type formulae for* $1/\pi$: *A second wind?*, in "Modular Forms and String Duality" (Banff, June 3–8, 2006), N. Yui, H. Verrill, and C. F. Doran (eds.), Fields Inst. Commun. Ser. **54** (2008), Amer. Math. Soc. & Fields Inst., 179–188; `http://arXiv.org/abs/0712.1332`.

[63] *Apéry limits of differential equations of order* 4 *and* 5, with G. Almkvist and D. van Straten, in "Modular Forms and String Duality" (Banff, June 3–8, 2006), N. Yui, H. Verrill, and C. F. Doran (eds.), Fields Inst. Commun. Ser. **54** (2008), Amer. Math. Soc. & Fields Inst., 105–123.

[64] *Zeta stars*, with Y. Ohno, Commun. Number Theory Phys. **2**:2 (2008), 325–347; Preprint MPIM 2007-134 (November 2007).

[65] *Hypergeometric transformations of linear forms in one logarithm*, with C. Viola, Funct. Approx. Comment. Math. **39**:2 (2008), 211–222.

[66] *Cyclic q-MZSV sum*, with Y. Ohno and J. Okuda, J. Number Theory **132**:1 (2012), 144–155; Preprint MPIM 2008-31 (March 2008).

[67] *An* Sp_4 *modularity of Picard–Fuchs differential equations for Calabi–Yau threefolds* (with an appendix by V. Pasol), with Y. Yang, in "Gems in Experimental Mathematics", T. Amdeberhan, L. A. Medina, and V. H. Moll (eds.), Contemporary Mathematics **517** (2010), Amer. Math. Soc., 381–413; Preprint MPIM 2008-36 (March 2008); `http://arXiv.org/abs/0803.3322`.

[68] *Ramanujan-type supercongruences*, J. Number Theory **129**:8 (2009), 1848–1857; `http://arXiv.org/abs/0805.2788`.

[69] *New representations for Apéry-like sequences*, with Heng Huat Chan, Mathematika **56**:1 (2010), 107–117.

[70] *On the non-quadraticity of values of the q-exponential function and related q-series*, with C. Krattenthaler, I. Rochev and K. Väänänen, Acta Arith. **136**:3 (2009), 243–269; Preprint (Math. Univ. Oulu, June 2008) & ESI-2026 (Erwin Schrödinger Intern. Inst. Math. Phys., Vienna, June 2008), 25 pp.; `http://arXiv.org/abs/0812.2921`.

[71] *Generalizations of Clausen's formula and algebraic transformations of Calabi–Yau differential equations*, with G. Almkvist and D. van Straten, Proc. Edin-

burgh Math. Soc. **54**:2 (2011), 273–295; Preprint MPIM 2009-38 (May 2009).

[72] *A hypergeometric problem*, J. Comput. Appl. Math. **233** (2009), 856–857.

[73] *New analogues of Clausen's identities arising from the theory of modular forms*, with Heng Huat Chan, Yoshio Tanigawa and Yifan Yang, Advances in Math. **228**:2 (2011), 1294–1314.

[74] *A refinement of Nesterenko's linear independence criterion with applications to zeta values*, with S. Fischler, Mathematische Annalen **347**:4 (2010), 739–763; Preprint MPIM 2009-35 (May 2009).

[75] *The Erdős–Moser equation* $1^k + 2^k + \cdots + (m-1)^k = m^k$ *revisited using continued fractions*, with Y. Gallot and P. Moree, Math. Comp. **80**:274 (2011), 1221–1237; Preprint MPIM 2009-49 (July 2009); `http://arXiv.org/abs/0907.1356`.

[76] *Experimental mathematics and mathematical physics*, with D. H. Bailey, J. M. Borwein and D. Broadhurst, in "Gems in Experimental Mathematics", T. Amdeberhan, L. A. Medina, and V. H. Moll (eds.), Contemporary Mathematics **517** (2010), Amer. Math. Soc., 41–58; `http://arXiv.org/abs/1005.0414`.

[77] *A supercongruence motivated by the Legendre family of elliptic curves*, with Heng Huat Chan and Ling Long, Mat. Zametki **88**:4 (2010), 620–624; English transl., Math. Notes **88**:4 (2010), 599–602.

[78] *Dedekind's η-function and Rogers–Ramanujan identities*, with S. Ole Warnaar, Bull. London Math. Soc. **44**:1 (2012), 1–11; `http://arXiv.org/abs/1001.1571`.

[79] *A q-rious positivity*, with S. Ole Warnaar, Aequat. Math. **81**:1-2 (2011), 177–183; `http://arXiv.org/abs/1003.1999`.

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Selected presentations

- **Seminars and schools**
  - Number Theory Seminar, Moscow Lomonosov State University (Spring 1991–Spring 2008)
  - Seminar on Diophantine Approximations and Transcendental Numbers, Moscow Lomonosov State University (Fall 1992–Spring 2008)
  - *Theta constants and differential equations*, Groupe d'Étude sur les ProBlémes Diophantiens, Institut de Mathématiques de Jussieu, Université Paris 6 (September 30, 1999)
  - *Theta constants and their logarithmic derivatives*, Seminar of the Division of Theory of Functions in Complex Variable, Steklov Mathematical Institute, Moscow (February 7, 2000)
  - *Group structures for linear forms involving odd zeta values*, Groupe de travail "Polylogarithmes et nombres zêta multiples" (organisateurs P. Cartier et M. Waldschmidt), Institut Henri Poincaré, Paris (June 25, 2001)
  - 12èmes rencontres arithmétiques de Caen, Université de Caen, France (June 29–30, 2001)
  - C.I.M.E.'s course in Analytic Number Theory, Cetraro (Cosenza), Italy (July 10–19, 2002)
  - *Diophantine problems of q-zeta values*, Mathematical Seminar, University of Oulu (Finland), Department of Mathematical Sciences (April 30, 2003)
  - *Diophantine properties of numbers related to Catalan's constant* (with T. Rivoal), Number Theory Seminar, Max Planck Institute for Mathematics in Bonn (May 14, 2003)
  - *Rational approximations to* $\zeta(4)$, Journée spéciale "Approximations diophantiennes et équations différentielles", Université de Paris 6 et Institut de Mathématiques de Jussieu, Paris (June 5, 2003)
  - *Hypergeometric functions and values of the Riemann zeta function*, Number Theory Seminar, Forschunginstitut für Mathematik, ETH-Zentrum, Zürich, Switzerland (June 6, 2003)
  - *Generalized hypergeometric series and values of Riemann's zeta function*, A colloquium talk, Fachbereich Mathematik, Universität Frankfurt, Germany (June 20, 2003)
  - *Some series and integrals related to the values of Riemann's zeta function*, Séminaire d'arithmétique, UFR de Mathématiques, Université des Sciences et Technologies de Lille, France (October 16, 2003)
  - *Integer-valued entire functions* (with P. Bundschuh), Séminaire "Analyse, Géométrie et Algèbre", Laboratoire de Mathématiques et Applications, Université de Metz, France (October 24, 2003)

- *Irrationality and Riemann's zeta function*, A colloquium talk, Centre for Mathematical Sciences, Lund University, Sweden (October 30, 2003)
- *On the transcendence degree of the differential field generated by Siegel modular forms* (with D. Bertrand), A colloquium talk, Mathematisches Institut, Universität Köln, Germany (November 7, 2003)
- *Hypergeometric transformations and zeta values*, Algebra Seminar, Matematisk Afdeling, Københavns Universitet, Denmark (January 26, 2004)
- *Computing mathematical constants* and *Hypergeometric integrals and irrationality proofs*, Institute for Studies in Theoretical Physics and Mathematics, School of Mathematics, Tehran, Iran (January 24 & 25, 2005)
- *Approximations to -, di- and tri- logarithms*, Séminaire d'arithmétique, UFR de Mathématiques, Université des Sciences et Technologies de Lille, France (June 16, 2005)
- *Problems and results for q-zeta values*, A colloquium talk, UFR de Mathématiques, Université des Sciences et Technologies de Lille, France (June 17, 2005)
- *Some algebraic manifolds originated by arithmetic study of* $\zeta(2)$, $\zeta(3)$, *and* $\zeta(4)$, Oberseminar Algebraische Geometrie, Institut für Mathematik, Johannes-Gutenberg-Universität Mainz, Germany (June 29, 2005)
- *Arithmetic of the values of Riemann's zeta function*, A colloquium talk, Institut für Mathematik, Johannes-Gutenberg-Universität Mainz, Germany (June 30, 2005)
- *On q-analogues of mathematical constants*, Seminar on Algebra, Geometry and Physics, Max Planck Institute for Mathematics in Bonn (February 21, 2006)
- *Quantum dilogarithm*, Seminar on Algebra, Geometry and Physics, Max Planck Institute for Mathematics in Bonn (March 14, 2006)
- *Some new formulae for* π, A colloquium talk, The Mathematical Institute of the University of Utrecht, The Netherlands (April 20, 2006)
- *Ramanujan-type formulas for* $1/\pi$: *A second wind?*, Number Theory Lunch Seminar, Max Planck Institute for Mathematics in Bonn (April 25, 2006)
- *Ramanujan's formulae for* π*, revisited*, Groupe d'Étude sur les ProBlémes Diophantiens, Institut de Mathématiques de Jussieu, Université Paris 6 (November 16, 2006)
- *Problems and results for q-analogues of mathematical constants*, Séminaire de Théorie des Nombres et Combinatoire, Institut Camille Jordan, Université Claude Bernard Lyon 1 (November 21, 2006)
- *Arithmetic of* $\zeta(4)$, Number Theory Lunch Seminar, Max Planck Institute for Mathematics in Bonn (May 16, 2007)
- *An* Sp_4 *modularity of Picard–Fuchs differential equations*, with Y. Yang, Gro-

upe d'Étude sur les ProBlémes Diophantiens, Institut de Mathématiques de Jussieu, Université Paris 6 (May 24, 2007)

- *Ramanujan's formulae for* $1/\pi$ *and their generalizations*, A colloquium talk, Centre for Mathematical Sciences, Lund University, Sweden (May 30, 2007)
- *An* Sp_4 *modularity of Picard–Fuchs differential equations for Calabi–Yau threefolds*, with Y. Yang, Number Theory Lunch Seminar, Max Planck Institute for Mathematics in Bonn (July 11, 2007)
- *Ramanujan-type formulas for* π, Oberseminar Computational Mathematics, Fachbereich Mathematik der Universität Kassel, Germany (October 2, 2007)
- *Ramanujan's formulae for* $1/\pi$ *and their generalisations*, Number Theory Seminar, Departments of Mathematics, ETH Zurich, Switzerland (October 19, 2007)
- *Ramanujan's formulae for* $1/\pi$, Number Theory Seminar, Dipartimento di Matematica, Università di Pisa, Italy (November 13, 2007)
- *Irrationality for values of Riemann's zeta function*, Number Theory Seminar, Department of Mathematics, National University of Singapore, Singapore (May 13, 2008)
- *Ramanujan-type formulae for* $1/\pi$ *and their generalizations*, Number Theory Seminar Department of Mathematics, National University of Singapore, Singapore (May 15, 2008)
- *Ramanujan-type supercongruences*, Number Theory Lunch Seminar, Max Planck Institute for Mathematics in Bonn (November 5, 2008)
- *On* Sp_4 *modularity of Calabi–Yau differential equations*, Séminaire de théorie des nombres, Institut Fourier, Université Grenoble 1 (November 26, 2008)
- *The past and future of Ramanujan's formulas for* $1/\pi$, A colloquium talk, Institut für Mathematik, Johannes-Gutenberg-Universität Mainz, Germany (December 4, 2008)
- *Algebraic transformations of hypergeometric differential equations*, Groupe d'Étude sur les ProBlémes Diophantiens, Institut de Mathématiques de Jussieu, Université Paris 6 (January 15, 2009)
- *The Diophantine equation* $1^k+2^k+\cdots+(m-1)^k = m^k$ *and continued fractions*, based on joint work with Y. Gallot and P. Moree, CARMA Seminar (University of Newcastle, Australia, June 18, 2009)
- *Irrationality problems of the values of Riemann's zeta function*, A colloquium talk, University of Queensland, Brisbane, Australia (November 9, 2009)
- *Ramanujan vs. Apéry:* $1/\pi$ *vs.* $\zeta(3)$, StatMech/Combinatorics seminar, The University of Melbourne, Australia (January 24, 2011)
- *Mahler measure of two-variate polynomials*, Moscow Number Theory Seminar, Moscow Lomonosov State University, Russia (February 17, 2011)

- *Boyd's conjectures on Mahler measures*, based on joint work with M. Rogers, Groupe d'Etude sur les ProBlèmes Diophantiens, Institut de Mathématiques de Jussieu, Université Paris 6 (July 7, 2011)
- *L-series of elliptic curves and Mahler measures*, based on joint work with M. Rogers, Number Theory Lunch Seminar, Max Planck Institute for Mathematics, Bonn, Germany (July 13, 2011)
- *Arithmetic of the values of Riemann's zeta function*, Number Theory Seminar, Mathematisches Institut, Georg-August-Universität Göttingen, Germany (July 14, 2011)
- *Odds of Riemann's zeta function*, CARMA colloquium, University of Newcastle, Australia (August 4, 2011)
- *Arithmetic of zeta values*, A colloquium talk, Kinki University, Osaka, Japan (October 28, 2011)
- *Mahler measures of two-variable polynomials*, Number Theory Seminar, Dipartimento di Matematica, Università di Pisa, Italy (May 2, 2012)
- *Perioddness of L-values*, Oberseminar Zahlentheorie, Mathematisches Institut, Universität Köln, Germany (May 25, 2012)
- *Ramanujan-type formulae for $1/\pi$: the art of translation*, Québec–Vermont Number Theory Seminar (Concordia University, Montreal, Canada, 9 May 2013)
- *A q-rious positivity*, Euler Kreis (Mainz, Germany, 12 June 2013)
- *Mahler measure*, A colloquium talk, Institut für Mathematik, Johannes-Gutenberg-Universität Mainz, Germany (27 June 2013)
- *Integrality of factorial ratios*, Number Theory Seminar (Dipartimento di Matematica, Università di Pisa, Italy, 8 July 2013)
- *Ramanujan-type formulae for $1/\pi$: the art of translation*, Number Theory Lunch Seminar (Max Planck Institute for Mathematics, Bonn, Germany, 24 July 2013)
- *Mock theta functions*, CARMA OANT Seminar (The University of Newcastle, Australia, 3 September 2013)
- *Mahler measure of two-variable polynomials*, Séminaire de théorie des nombres (Institut Fourier, Université Grenoble 1, 19 March 2014)
- *21st century generating functions of Legendre polynomials*, Number Theory Seminar (Dipartimento di Matematica, Università di Pisa, Italy, 25 March 2014)
- *A new irrationality measure of $\zeta(2)$*, Groupe d'Etude sur les ProBlèmes Diophantiens (Institut de Mathématiques de Jussieu, Université Paris 6, 3 April 2014)

- *Mahler measures for a family of hyperelliptic curves*, Number Theory Lunch Seminar (Max Planck Institute for Mathematics, Bonn, Germany, 9 April 2014)
- *Many moons of Mahler measures*, Algebra seminar (Mathematical Sciences Institute, Australian National University, Canberra, Australia, 29 April 2014)
- *Arithmetic of the values of Riemann's zeta function*, A colloquium talk (Mathematical Sciences Institute, Australian National University, Canberra, Australia, 1 May 2014)
- *Arithmetic of the values of Riemann's zeta function*, A seminar talk (Shanghai Jiaotong University, Shanghai, China, 23 May 2014)
- *Mahler measures*, A seminar talk (Tongji University, Shanghai, China, 26 May 2014)
- *Generating functions of Legendre polynomials and identities for* π, Number theory seminar (East China Normal University, Shanghai, China, 28 May 2014)
- *Beyond binomials, or integer factorial ratios*, A seminar talk (Shanghai Jiaotong University, Shanghai, China, 30 May 2014)
- *Apéry's theorem and problems for the values of Riemann's zeta function and their q-analogues*, D. Sc. presentation (Moscow Lomonosov State University, 20 June 2014)
- *Apéry-like sequences and positive rational functions*, Number Theory Seminar (Department of Mathematics, National University of Singapore, Singapore, 17 July 2014)
- *On rational approximations to* $\zeta(2)$, Quèbec–Vermont Number Theory Seminar (McGill University, Montreal, Canada, 26 February 2015)
- *Algebraic transformations of hypergeometric series, asymptotics of Apery-like sequences and Ramanujan's series for* $1/\pi$, Seminar on Algebra, Geometry and Physics (Max Planck Institute for Mathematics, Bonn, Germany, 17 March 2015)
- *A new irrationality measure of* π^2, Number Theory Lunch Seminar (Max Planck Institute for Mathematics, Bonn, Germany, 8 April 2015)
- *Hankel determinants and irrationality questions*, UNSW Number Theory Seminar (University of New South Wales, Sydney, Australia, 18 November 2015)
- *A determinantal approach to irrationality*, Number Theory Lunch Seminar (Max Planck Institute for Mathematics, Bonn, Germany, 25 May 2016)
- *Crouching AGM, Hidden Modularity*, Oberseminar Zahlentheorie (Universität Köln, Cologne, Germany, 30 May 2016)
- *Short random walks along Mahlerlaan*, Intercity Number Theory Seminar (Vrije Universiteit Amsterdam, The Netherlands, 11 November 2016)
- *Hypergeometry and modular Calabi–Yau manifolds*, Geometry Seminar (Radboud University, Nijmegen, The Netherlands, 12 December 2016)

- *Classical hypergeometry and the modularity of Calabi–Yau manifolds*, Number Theory Lunch Seminar (Max Planck Institute for Mathematics, Bonn, Germany, 14 December 2016)
- *Crouching AGM, Hidden Modularity*, A colloquium talk (The University of Melbourne, Australia, 11 April 2017)
- *Hypergeometric heritage of W. N. Bailey*, CARMA colloquium (The University of Newcastle, NSW, Australia, 16 May 2017)
- *Modular Calabi–Yau manifolds, from a hypergeometric perspective*, Number Theory Seminar (Institut Fourier, Université Grenoble Alpes, France, 1 June 2017)
- *A magnetic double integral*, Oberseminar Zahlentheorie (Universität Köln, Cologne, Germany, 18 July 2017)
- *Special hypergeometric motives and* (*p-adic*) *L-functions*, Seminar on Algebra, Geometry and Physics (Max Planck Institute for Mathematics, Bonn, Germany, 1 August 2017)
- *Hypergeometry inspired by irrationality questions*, Number Theory Lunch Seminar (Max Planck Institute for Mathematics, Bonn, Germany, 9 August 2017)
- *Hypergeometric motives for rigid hypergeometric Calabi–Yau threefolds*, UNSW Number Theory Seminar (University of New South Wales, Sydney, Australia, 16 August 2017)
- *Variations on One over Pi*, A colloquium talk (Vrije Universiteit Amsterdam, The Netherlands, 4 October 2017)
- *Een verhaal over pi: One over pi*, A colloquium talk (Universiteit Leiden, The Netherlands, 23 November 2017)
- *Special hypergeometric motives and their L-functions*, Algebra and Topology Seminar (Mathematical Sciences Institute, Australian National University, Canberra, Australia, 7 August 2018)
- *Irrationality of odd zeta values*, UNSW Number Theory Seminar (University of New South Wales, Sydney, Australia, 8 August 2018)
- *Irrationality of the values of Riemann's zeta function*, Number theory seminar (Universität Wien, Austria, 30 April 2019)
- *Creative microscoping*, UNSW Number Theory Seminar (University of New South Wales, Sydney, Australia, 21 August 2019)
- Intercity Number Theory Seminar (Radboud University Nijmegen, Netherlands, 6 September 2019)
- *I Prefer PI*, Combinatorics Seminar (Research Institute for Symbolic Computation — RISC, Johannes Kepler University, Linz, Austria, 4 February 2020)
- *Arithmetic hypergeometric series* & *Arithmetic q-deformations*, Geometry and Mathematical Physics Seminar (Loughborough University, UK, 17 & 18 March

2020)

- *Irrationality through an irrational time*, Number Theory Web Seminar (Cyberspace, Zoom, 21 July 2020)
- *Creative microscoping*, Upstate New York Number Theory Colloquium (Cyberspace, Zoom, 14 September 2020)
- *(Quasi-)magnetic modular forms*, Japan Europe Number Theory Exchange Seminar (Cyberspace, Zoom, 13 October 2020)
- *π, an irrational number*, RU Mathematics Online Lunch Seminar (Cyberspace, Zoom, 29 October 2020)
- *Dwork-type (q-)(super)congruences*, Warsaw Number Theory Seminar (Cyberspace, Zoom, 23 November 2020)
- *10 years of q-rious positivity. More needed!*, Topics in Special Functions and Number Theory (Cyberspace, Zoom, 7 January 2021)
- *Experimental mathematics and irrationality questions*, Oberseminar (Universität Duisburg–Essen, Germany, 14 October 2021)
- *Rogers–Ramanujan reflections*, Oberseminar Zahlentheorie (Mathematisches Institut, Universität Köln, Germany, 25 October 2021)
- *Motivation for q-deformation*, Kolloquium Geometrie und Arithmetik
  Irrationality by experiment, Institutskolloquium (Institut für Mathematik, Johannes-Gutenberg-Universität Mainz, Germany, 3 November 2022)
- *Intégrales hyperelliptiques (mais pas hypergéométriques) satisfaisant à des équations différentielles du second ordre*, Number Theory Lunch Seminar (Max Planck Institute for Mathematics, Bonn, Germany, 19 July 2023)
- *Mahler measures at work*, Pure Maths Seminar (University of Queensland, Brisbane, Australia, 22 August 2023)
- *Arithmetic differential equations*, Seminar on Motivic differential equations and beyond (Institut Henri Poincaré, Paris, France, 12 January 2024)

- **External lectures**
  - *Lectures on zeta values*, University of Oulu, Department of Mathematical Sciences (Oulu, Finland, March 24–April 5, 2002)
  - A short course on *Special functions in number theory*, Institute for Studies in Theoretical Physics and Mathematics, School of Mathematics (Tehran, Iran, January 17–February 6, 2005)
  - *Lectures on diophantine approximations*, University of Oulu, Department of Mathematical Sciences (Oulu, Finland, December 13–21, 2006)
  - *Lectures on modular forms*, University of Oulu, Department of Mathematical Sciences (Oulu, Finland, November 19–30, 2007)
  - A course on *Modular forms*, AMSI Summer School 2013 (The University of Melbourne, Australia, 7 January–1 February 2013)

- A course on *Continued Fractions*, AMSI Summer School 2015 (The University of Newcastle, NSW, Australia, 5–29 January 2015)
- A minicourse on *Arithmetic differential equations*, School and research conference "Modular forms and beyond" (Euler International Mathematical Institute, St. Petersburg, Russia, 21–26 May 2018)
- A minicourse on *Many variables of Mahler measures*, Masterclass "Mahler measures and special values of L-functions" (Centre for Symmetry and Deformation, Københavns Universitet, Copenhagen, Denmark, 27–31 August 2018)
- Course on *Number theory and special functions: Modular functions*, OPSFA Summer School (Radboud University Nijmegen, Netherlands, 8–12 August 2022)
- Lecture series *A rational introduction to irrationality*, Summer School of the Vienna School of Mathematics (Dienten am Hochkönig, Austria, 10–16 September 2023)

- **External conferences**
  - *On rational approximations of the values of G-functions*, The 2nd International Conference "Algebraic, Probabilistic, Geometric, Combinatorial, and Functional Methods in Number Theory" (Voronezh, Russia, September 25–30, 1995)
  - *Lower estimates of polynomials of the values of E-functions*, The International Conference on Diophantine Analysis and its Applications in Honor of Acad. V. Sprindžuk (Minsk, Belorussia, September 1–8, 1996)
  - *On the rank of special numerical linear forms*, The 3rd International Conference "Modern Problems in Number Theory and its Applications" (Tula, Russia, September 9–14, 1996)
  - *On the measure of linear independence for values of E-functions*, The 3rd International Conference "Modern Problems in Number Theory and its Applications" (Tula, Russia, September 9–14, 1996)
  - *On the measure of irrationality for values of elliptic integrals*, The International Workshop on the Analytic Number Theory and Applications (Moscow Lomonosov State University, February 3–6, 1997)
  - *Theta constants and differential equations* (with D. Bertrand), The Meeting on Diophantische Approximationen (Mathematische Forschungsinstitut Oberwolfach, Germany, April 9–15, 2000)
  - *Number theory casting a look at the mirror*, The International Conference on the Transcendental Numbers (Moscow Lomonosov State University, September 18–22, 2000)
  - *Irrationality of values of zeta-function*, The 23th Conference of Young Scientists (Moscow Lomonosov State University, April 9–14, 2001)

- *Hopf algebras related to multiple zeta values*, The Lomonosov Conference 2001 (Moscow Lomonosov State University, April 25, 2001)
- *A problem of irrationality of zeta values*, Journées INTAS–RFBR "Problèmes diophantiens et nombres transcendants" (Institut de Mathématiques de Jussieu–Chevaleret, Paris, June 27–28, 2001)
- *Irrationality problems for values of the Riemann zeta function at odd integers*, The 4th International Conference "Modern Problems of Number Theory and its Applications" Dedicated to the 180th Anniversary of P. L. Chebysheff and the 110th Anniversary of I. M. Vinogradov (Tula, Russia, September 10–15, 2001)
- *Derivatives of Siegel modular forms and exponential functions* (with D. Bertrand), The Conference "Recent Advances in Mathematical Analysis and Number Theory", Polish Science Days in Russia (Steklov Mathematical Institute, Moscow, October 17–18, 2001)
- *Irrationality measures for q-zeta values*, The Conference "Problèmes Diophantiens" (CIRM, Marseille Luminy, France, May 6–10, 2002)
- *Euler-type multiple integrals as linear forms in zeta values*, The Meeting on Elementare und Analytische Zahlentheorie (Mathematische Forschungsinstitut Oberwolfach, Germany, March 9–15, 2003)
- *Well-poised generation of Apéry-like recursions*, XXIIIrd Journées Arithmétiques Graz 2003 (Graz, Austria, July 6–12, 2003)
- *New irrationality measures for q-logarithms* (with T. Matalo-Aho and K. Väänänen), Workshop on Diophantine Approximation (Lorentz Center, Leiden, the Netherlands, July 28–August 2, 2003)
- *On q-analogues of Apéry's approximations*, Seventh International Symposium on Orthogonal Polynomials, Special Functions and Applications (Copenhagen, Denmark, August 18–22, 2003)
- *On a combinatorial problem of Asmus Schmidt*, Kolloquium über Kombinatorik (Otto-von-Guericke-Universität, Magdeburg, Germany, November 14–15, 2003)
- *Irrationality of mathematical constants* (a plenary talk), 35th Annual Iranian Mathematical Conference (Chamran University, Ahwaz, Iran, January 26–29, 2005)
- *Irrationality of the values of Riemann's zeta function*, The International Conference "Analytical Methods in Number Theory, Probability Theory and Mathematical Statistics" (St. Petersburg Department of the Steklov Mathematical Institute and the Euler International Mathematical Institute, St. Petersburg, Russia, April 25–29, 2005)
- *Arithmetic results for q-analogues of mathematical constants*, A contributed

talk, Gauss–Dirichlet Conference (Mathematisches Institut, Georg-August-Universität, Göttingen, Germany, June 20–24, 2005)

- *A new lower bound for* $\|(3/2)^k\|$, A contributed talk, XXIVth Journées Arithmétiques 2005 (Marseille, France, July 4–8, 2005)
- *Effective lower bounds for* $\|(1+1/N)^k\|$, Semester "Diophantine Approximation and Heights" (Erwin Schrödinger Institute for Mathematical Physics, Vienna, Austria, March 20–April 2, 2006)
- *Hypergeometric approximations to polylogarithms*, The Conference "Diophantine approximation and transcendental numbers" (CIRM, Marseille Luminy, France, September 4–8, 2006)
- *Magic of Apéry's numbers*, The Conference "Zeta functions" (French–Russian Poncélet Laboratory, Independent University of Moscow, September 18–22, 2006)
- The International Conference "Diophantine and analytic problems in number theory" dedicated to the 100th anniversary of A. O. Gelfond (Moscow Lomonosov State University, January 29–February 2, 2007)
- *Linear independence of values of Tschakaloff series*, with K. Väänänen, The Meeting on Diophantische Approximationen (Mathematische Forschungsinstitut Oberwolfach, Germany, April 15–21, 2007)
- *Hypergeometric series and approximations of mathematical constants*, 9th Conference on Orthogonal Polynomials, Special Functions and Applications (Marseille, France, July 2–6, 2007)
- Développements récents en approximation diophantienne (CIRM, Luminy-Marseille, France, October 8–12, 2007)
- *Ramanujan's formulae for* $1/\pi$ *and their generalisations*, The International Conference "Analytical and Combinatorial Methods in Number Theory and Geometry" (University of Crete, Iraklio, Greece, October 22–26, 2007)
- *An* Sp_4 *modularity of Picard–Fuchs differential equations for Calabi–Yau threefolds*, with Y. Yang, Workshop on p-adic Aspects of Differential Equations: Crystals, Mirror symmetry, Modular Forms (Centre Interfacultaire Bernouilli, Lausanne, Switzerland, November 5–8, 2007)
- Semester "Combinatorics and Statistical Physics" (Erwin Schrödinger Institute for Physics and Mathematics, Vienna, Austria, March 23–29, 2008)
- *Algebraic transformations of Calabi–Yau differential equations*, based on joint work with Heng Huat Chan, Gert Almkvist and Duco van Straten, Workshop "Number Theory and Physics at the Crossroads" (Banff International Research Station for Mathematical Innovation and Discovery, Alberta, Canada, September 21–26, 2008)
- *Discrete analogues of Ramanujan's series for* $1/\pi$, Workshop on Geometry and

Arithmetic around Hypergeometric Functions (Mathematische Forschungsinstitut Oberwolfach, Germany, September 28–October 4, 2008)

- The Final Workshop of the Trimester on Diophantine Equations (Hausdorff Institute of Mathematics, Bonn, Germany, April 23–29, 2009)
- *Hypergeometric (super)congruences*, A plenary talk, 10th International Symposium on Orthogonal Polynomials, Special Functions and Applications (Leuven, Belgium, July 20–25, 2009)
- *Arithmetic hypergeometric series*, CARMA Workshop on Multidimensional Numerical Integration and Special Function Evaluation (University of Newcastle, Australia, August 18, 2009)
- *Clausen-type identities arising from the theory of modular forms*, based on joint work with H. H. Chan, Y. Tanigawa and Y. Yang, 53rd Annual Meeting of the Australian Mathematical Society (University of South Australia, Adelaide, Australia, September 28–October 1, 2009)
- *Arithmetic problems for Riemann's zeta values*, Official CARMA Opening and Workshop (The University of Newcastle, Australia, October 30–November 1, 2009)
- *Series for* $1/\pi$ *revisited*, based on joint work with J. Guillera, Exploratory Experimentation and Computation in Number Theory Workshop (The University of Newcastle, Australia, July 7–9, 2010)
- *The Erdős–Moser diophantine equation and the continued fraction of* $\log 2$, based on joint work with Y. Gallot and P. Moree, 54th Annual Meeting of the Australian Mathematical Society (The University of Queensland, Brisbane, Australia, September 27–30, 2010)
- *The theory of Karma: Three reincarnations of the logarithm*, CARMA Workshop on Multi Zeta Values (The University of Newcastle, Australia, October 20, 2010)
- *Mahler measures and modular funs*, based on joint work with M. Rogers, Computational and Analytical Mathematics Conference in honour of Jonathan Borwein's 60th birthday (The IRMACS Centre, Simon Fraser University, Burnaby, BC, Canada, May 16–20, 2011)
- Arbeitstagung (Max Planck Institute for Mathematics, Bonn, Germany, June 24–30, 2011)
- *Legendre polynomials and identities for* π, Workshop on Explicit Methods in Number Theory (Mathematische Forschungsinstitut Oberwolfach, Germany, July 17–22, 2011)
- *Generating functions of Legendre polynomials*, A contributed talk, 11th International Symposium on Orthogonal Polynomials, Special Functions and Applications (Madrid, Spain, August 29–September 2, 2011)

- *Ramanujan-style mathematics for Mahler measures*, A keynote address at the session of algebra and number theory, 55th Annual Meeting of the Australian Mathematical Society (University of Wollongong, NSW, Australia, September 26–29, 2011)
- *Mahler measures and L-series of elliptic curves*, Workshop "Analytic Number Theory — related multiple aspects of arithmetic functions" (Research Institute for Mathematical Sciences, Kyoto University, Japan, October 31–November 2, 2011)
- *Factorial ratios*, JonFest DownUnder — Workshop on Experimental and Analytical Mathematics (The University of Newcastle, Australia, November 29–December 1, 2011)
- International Number Theory Conference in Memory of Alf van der Poorten (The University of Newcastle, Australia, March 12–16, 2012)
- *Arithmetic applications of Hankel determinants*, Workshop on Diophantische Approximationen (Mathematische Forschungsinstitut Oberwolfach, Germany, April 22–28, 2012)
- *Legendre polynomials and identities for* π, Workshop "Hypergeometric series and their generalizations in algebra, geometry, number theory and physics" (Institut H. Poincaré, Paris, France, May 29–June 1, 2012)
- *Rogers–Ramanujan identities, dilogarithm identities and experimental mathematics*, An invited lecture, International Conference "The works of Srinivasa Ramanujan and related topics" (Department of Studies in Mathematics, University of Mysore, Manasagangotri, Mysore, India, December 12–14, 2012)
- *Ramanujan-type formulae for* $1/\pi$ *and Legendre polynomials*, International Conference "The Legacy of Srinivasa Ramanujan" (Srinivasa Ramanujan Centre, Shanmugha Arts, Science, Technology & Research Academy — SASTRA Kumbakonam, Tamil Nadu, India, December 14–15, 2012)
- *Hypergeometric evaluations of L-values of an elliptic curve*, A plenary talk, Ramanujan-125 Conference "The Legacy of Srinivasa Ramanujan" (University of Delhi, New Delhi, India, December 17–22, 2012)
- Lectures on *Mahler measure and L-values*, Arctic Number Theory Workshop (Saariselkä, Lapland, Finland, 15–20 June 2013)
- *Legendre polynomials, Apéry-like recurrence equations and zeta values*, Special Functions and Special Numbers, A conference on the occasion of the 60th birthday of Frits Beukers (Universiteit Utrecht, Utrecht, The Netherlands, 10–12 July 2013)
- *Non-critical L-values as periods*, Workshop on Explicit Methods in Number Theory (Mathematische Forschungsinstitut Oberwolfach, Germany, 14–20 July 2013)

- *"Elementary" proofs of Ramanujan's formulae for* $1/\pi$, based on joint work with J. Guillera, 57th Annual Meeting of the Australian Mathematical Society (The University of Sydney, NSW, Australia, 30 September–3 October 2013)
- *Positivity of rational functions and their diagonals*, based on joint work with A. Straub, CARMA Workshop "Number Theory Down Under" (The University of Newcastle, NSW, Australia, 5 October 2013)
- *Positive aspects of AZ-like sequences*, Gertfest — Algebra and Number Theory Day (Centre for Mathematical Sciences, Lund University, Sweden, 17 April 2014)
- *Radial asymptotics of Mahler functions and hypertranscendence questions*, Workshop "Diophantine approximation and transcendence" (Centre international de rencontres mathématiques, Marseille Luminy, France, 15–19 September 2014)
- *Radial asymptotics of (multiple) q-zeta values and independence questions*, Research Trimester on Multiple Zeta Values, Multiple Polylogarithms, and Quantum Field Theory (ICMAT, Madrid, Spain, 20 September–3 October 2014)
- *Every MZV has two sides*, AMSI–CARMA Workshop "Number Theory Down Under 2014" (The University of Newcastle, NSW, Australia, 24–25 October 2014)
- *Mahler measures of hyperelliptic families*, Workshop "Regulators, Mahler measures, and special values of L-functions" (Centre de recherches mathématiques, Université de Montréal, Canada, 16–20 February 2015)
- *Multiple q-zeta values, bracketed*, Aachen–Köln–Lille–Siegen Seminar on Automorphic Forms (Universität Köln, Cologne, Germany, 11 March 2015)
- *Modular parametrizations of 4th order linear differential operators and their applications in number theory*, Workshop "Automorphic forms: advances and applications" (Centre international de rencontres mathématiques, Marseille Luminy, France, 25–29 May 2015)
- *Hypergeometric Series: On Number Theory's Secret Service*, A plenary talk; *Mahler measures of hyperelliptic families & Positive rational functions and their diagonals*, 2 minisymposium talks, 13th International Symposium on Orthogonal Polynomials, Special Functions and Applications (National Institute of Standards and Technology, Gaithersburg, MD, USA, 1–5 June 2015)
- *On a family of polynomials related to* $\zeta(2,1) = \zeta(3)$, CARMA Workshop on Mathematics and Computation (The University of Newcastle, Australia, 19–21 June 2015)
- *Random walks, Mahler measures and arithmetic differential equations*, ACEMS Workshop "Stochastic processes and special functions" (The University of Mel-

bourne, Australia, 13–14 August 2015)

- AMSI–AustMS–CARMA Workshop "Number Theory Down Under^3" (The University of Newcastle, Australia, 18–19 September 2015)
- *Life of 1/Pi*, A plenary talk, 59th Annual Meeting of the Australian Mathematical Society (Flinders University, Adelaide, SA, Australia, 28 September–1 October 2015)
- Statistical Mechanics and Combinatorics Workshop "Guttmann 2015—70 and counting" (Newcastle, Australia, 7–8 December 2015)
- *On certain irrational values of the logarithm: beyond the* 1979 *limitations*; *Short random walks and Mahler measures*, A colloquium talk, International Number Theory Conference in honour of Krishna Alladi's 60th birthday (University of Florida, Gainesville, USA, 17–21 March 2016)
- *Discriminants of reciprocal polynomials*, Capital Number Theory Conference (Mathematical Sciences Institute, Australian National University, Canberra, Australia, 8–9 April 2016)
- *Determinants and irrationality*, Workshop on Diophantische Approximationen (Mathematische Forschungsinstitut Oberwolfach, Germany, 10–16 April 2016)
- *Multivariate transfinite diameter*, Conference in honour of Michel Waldschmidt (Marina di San Gregorio, Patù (Lecce), Italy, 13–17 June 2016)
- *Classical hypergeometry and the modularity of Calabi–Yau manifolds*, Workshop "Modular Forms in String Theory" (Banff International Research Station for Mathematical Innovation and Discovery, Alberta, Canada, 25–30 September 2016)
- The Big Picture — Workshop on the occasion of Jan Stienstra's retirement (Utrecht University, The Netherlands, 25 November 2016)
- MATRIX program "Hypergeometric motives and Calabi–Yau differential equations" (The University of Melbourne, Creswick, Australia, 8–28 January 2017)
- *Elliptic dilogarithm and Mahler measures*, Workshop on Elliptic Hypergeometric Functions in Combinatorics, Integrable Systems and Physics (Erwin Schrödinger Institute for Mathematical Physics, Vienna, Austria, 20–24 March 2017)
- *Some hypergeometry inspired by irrationality questions*, Workshop on Diophantine approximation and related fields — York 2017 (University of York, UK, 26–30 June 2017)
- *A magnetic double integral*, Jonathan M. Borwein (1951–2016): Commemorative Conference (The University of Newcastle, NSW, Australia, 25–29 September 2017)
- *Hypergeometric motives for rigid hypergeometric Calabi–Yau threefolds*, DIAMANT Symposium Fall 2017 (Hotel Van der Valk, Breukelen, The Nether-

lands, 30 November–1 December 2017)

- *A q-microscope for hypergeometric congruences & Many (more) zeta values are irrational*, Trimester Program "Periods in Number Theory, Algebraic Geometry and Physics" (Hausdorff Research Institute for Mathematics, Bonn, Germany, 16 March–15 April 2018)
- *Special hypergeometric motives and their L-functions*, Conference "Automorphic forms and algebraic geometry" (St. Petersburg Department of the Steklov Mathematical Institute, St. Petersburg, Russia, 14–18 May 2018)
- *Irrationality of odd zeta values and other treasures*, Conference on Elementare und Analytische Zahlentheorie — ELAZ 2018 (Max Planck Institute for Mathematics, Bonn, Germany, 3–7 September 2018)
- *Creative microscoping*, 81st Séminaire Lotharingien de Combinatoire — Krattenthaler Fest (Strobl, Austria, 9–12 September 2018)
- *Generating functions of products of orthogonal polynomials*, Topics on Orthogonal Matters Fest (Radboud University Nijmegen, Netherlands, 10–11 December 2018)
- Duco van Straten Festkolloquium (Johannes-Gutenberg-Universität Mainz, Germany, 31 January 2019)
- *Numbers can be not rational*, Dutch Mathematics Days 2019 (Hotel NH Eindhoven Conference Centre Koningshof, Netherlands, 1–2 February 2019)
- *The Mahler measure and Ising model*, Conference on Integrable systems and automorphic forms (Université de Lille, France, 19–22 February 2019)
- *Many odd zeta values are irrational*, Conference "Transcendence and Diophantine Problems", in memory of Naum Ilyitch Feldman (Moscow Institute of Physics and Technology & Moscow State University, Russia, 10–14 June 2019)
- *q-Deformation of modular forms*, Conference of the Geometry and Quantum Theory research cluster (Ernst Sillem Hoeve in Den Dolder, Netherlands, 4–5 July 2019)
- *A method of creative microscoping*, Annual Symposium on Analytic Number Theory and Related Topics (Research Institute for Mathematical Sciences, Kyoto University, Japan, 15–18 October 2019)
- *Random walk and Mahler measures*, Workshop on Hypergeometric Series, Mahler Measures and Multiple Zeta Values (Mathematical Institute, Tohoku University, Sendai, Japan, 24–26 October 2019)
- *Pfaffians and determinants in irrationality questions*, 85th Séminaire Lotharingien de Combinatoire (Strobl, Austria, 6–9 September 2020)
- *Magnetic modular forms*, Online conference "Days of Transcendence" on the occasion of Yuri Nesterenko's 75th birthday (Cyberspace, Zoom, 31 January–2 February 2022)

- *Apéry sequences and limits: new perspectives*, Workshop on Diophantische Approximationen (Mathematische Forschungsinstitut Oberwolfach, Germany, 17–23 April 2022)
- *Differential equations for special hyperelliptic integrals*, Simons Symposium on Periods and L-values of Motives II (Gleneagles Hotel, Scotland, 1–7 May 2022)
- *uNTitled*, Tenth Bucharest Number Theory Days (Bucharest, Romania, 3–5 August 2022)
- *q-rious* !*-ratios*, 88th Séminaire Lotharingien de Combinatoire (Strobl, Austria, 4–7 September 2022)
- *Cellular rational approximations to* $\zeta(5)$, $\mathbb{N}^3$-Days XVII (University of Hamburg, Germany, 14–15 October 2022)
- MiLyon Workshop on Effective Aspects in Diophantine Approximation (University of Lyon, France, 27–31 March 2023)
- *Magnetic modular forms*, Workshop on Algebraic geometry, automorphic forms and integrable models (Université de Lille, France, 15–17 May 2023)
- Conference on Orthogonal Polynomials and Applications (KU Leuven, Belgium, 8–10 June 2023)
- International conference on MM(P): Mahler Measures of Polynomials, on the occasions of Mahler's 120th birthday and 90 years of Lehmer's problem (Radboud University Nijmegen, Netherlands, 24–27 October 2023)
- *The zeta team* (public talk), Special week of Computer Algebra for Functional Equations in Combinatorics and Physics (Institut Henri Poincaré, Paris, France, 27 November–2 December 2023)
- *Mahler measures, modular regulators and multiple modular values*, International Conference on Modular Forms and q-Series (University of Cologne, Germany, 11–15 March 2024)
- *Modular regulators and multiple modular values*, Follow-up workshop to the trimester program "Periods in Number Theory, Algebraic Geometry and Physics" (Hausdorff Research Institute for Mathematics, Bonn, Germany, 22–26 April 2024)
- International conference "HOPE — Hypergeometric and Orthogonal Polynomials Event" (Radboud University Nijmegen, Netherlands, 1–3 May 2024)

- **Forthcoming talks and events**
  - Thematic Programme on Algebraicity and Transcendence of Singular Differential Equations (Erwin Schrödinger Institute for Mathematical Physics, Vienna, Austria, 7–18 October 2024)
  - Lectures on Multiple zeta values and beyond (Kyushu University, Fukuoka, Japan, 10–15 February 2025)

- Conference on Modular forms and multiple zeta values: Celebration of Masanobu Kaneko's 60+th birthday (Kindai University, Osaka, Japan, 17–22 February 2025)