The following lists all papers that have appeared or been accepted since 2018, followed by preprints, papers in preparation, papers in progress, and current book projects.

Published or accepted for publication

(with J. Lewis) Cotangent sums, quantum modular forms, and the generalized Riemann hypothesis. Res. Math. Sci. **87** (2018) 406–429

(with D. Chen and M. Möller) Quasimodularity and large genus limits of Siegel-Veech constants. J. Amer. Math. Soc. **31** (2018) 1059–1163

(with C. Dupont) An approach via series. Appendix to C. Dupont, "Odd zeta motive and linear forms in odd zeta values," Compositio Math. **154** (2018) 342–379 (appendix: pp. 373–378)

(with A. Popa) An elementary proof of the Eichler-Selberg trace formula. J. reine Angew. Math. **762** (2018), 105–122

The arithmetic and topology of differential equations. In *Proceedings of the European Congress of Mathematics, Berlin, 18–22 July, 2016*, V. Mehrmann and M. Skutella (Eds.), European Mathematical Society (2018), 717–776

(with Y. Choie and Y. Park) Periods of modular forms on $\Gamma_0(N)$ and products of Jacobi theta functions. Journal of the European Mathematical Society **21** (2019), 1379–1410

(with M. Griffin, K. Ono, and L. Rolen) Jensen polynomials for the Riemann zeta function and other sequences. Proc. Nat. Acad. Sci. **23** (2019), 11103–11110

(with V. Golyshev and D. van Straten) Dimensional interpolation and the Selberg integral. Journal of Geometry and Physics **145** (2019) 103455, 7 pages

(editor, with J. Schwermer and S. Wimmer-Zagier) *Friedrich Hirzebruch Gesammelte Abhandlungen/ Collected Papers, Band III 1988–2012.* Springer Nature Switzerland (2019), xvi + 659 pages

(with S. Garoufalidis) Asymptotics of Nahm sums at roots of unity. The Ramanujan Journal, to appear, 18 pages (published online July 2020)

(with L. Weng) Higher-rank zeta functions for elliptic curves. Proc. Nat. Acad. Sciences **117** (2020), 4546–4558

(with L. Weng) Higher-rank zeta functions and SL_n-zeta functions for curves. Proc. Nat. Acad. Sciences **117** (2020), 6398–6408

(with B. Dubrovin and D. Yang) Gromov–Witten invariants of the Riemann sphere. Pure and Applied Mathematics Quarterly **16** (2020), 153–190

(with D. Chen, M. Möller, and A. Sauvaget) Masur–Veech volumes and intersection theory on the moduli space of Abelian differentials. Invent. Math. **222** (2020), 283–373

(with A. Pohl) Dynamics of geodesics and Maass cusp forms. To appear in L'Enseignement Mathématique, 27 pages Enseign. Math. **66** 3–4 (2020), 305–340

(with F. Zerbini) Genus-zero and genus-one string amplitudes and special multiple zeta values. Communications in Number Theory and Physics **14** (2020), 413–452

(with D. Yang and Y. Zhang) Masur–Veech volumes of quadratic differentials and their asymptotics. J. Geom. Phys. **158** (2020), 103870, 12 pp.

(with V. Golyshev) Interpolated Apéry numbers, quasiperiods of modular forms, and motivic gamma functions. In *Integrability, Quantization, and Geometry, Vol. II. Quantum theories and algebraic geometry*, Proc. Sympos. Pure Math. **103** 2, Amer. Math. Soc., Providence, RI, (2021) 281–301

(with B. Dubrovin and D. Yang) On tau-functions for the KdV hierarchy. Selecta Mathematica (N.S.) **27** 1 (2021), Paper No. 12, 47 pages

(with L. Touzo and M. Marsili) Information thermodynamics of financial markets: the Glosten-Milgrom model. J. Stat. Mech. Theory Exp. 2021, no. 3, Paper No. 033407, 21 pages

Power partitions and a generalized eta transformation property. Hardy-Ramanujan Journal **44** (2021), 1–18

(with F. Gonçalves) Strichartz estimates with broken symmetries. Rev. Mat. Iberoam. (2022). Published Online – Print pending. DOI: 10.4171/RMI/1322v, 11 pages. arXiv:2011.02187

(with E. Garcia-Failde) A curious identity that implies Faber's conjecture. Bull. London Math. Soc. **54** (2022), 1839–1845

(with F. Calegari and S. Garoufalidis) Bloch groups, algebraic K-theory, units, and Nahm's conjecture. Ann. Scient. Éc. Norm. Sup. **56** (2023), 383–426. arXiv:1712.04887, arXiv:1812.07690

(with D. Radchenko) Arithmetic properties of the Herglotz function. J. reine angew. Math. **2023** 797 (2023), 229–253. arXiv:2012.15805

(with S. Garoufalidis) Hyperbolic 3-manifolds, the Bloch group, and the work of Walter Neumann. Celebratio Mathematica 2023, to appear, 19 pages, arXiv:2304.12545

(with K. Nagatomo and Y. Sakai) Modular linear differential equations and generalized Rankin-Cohen brackets. Trans. AMS, to appear, 34 pages. arXiv:2210.10686

(with N. Skoruppa and V. Gritsenko) Theta blocks. Journal of the European Mathematical Society, to appear, 57 pages. arXiv:1907:00188

(with B. Dubrovin and D. Yang) Geometry and arithmetic of integrable hierarchies of KdV type. I. Integrality. Advances in Mathematics, to appear, 54 pages arXiv:2101.10924

(with S. Garoufalidis) Knots and their related q-series, SIGMA, to appear, arXiv:2304.09377,

Preprints:

(with S. Garoufalidis) Knots, perturbative series and quantum modularity. (97 pages, submitted). arXiv:2111.06645

On the values of the function $F_{k,\varepsilon}(s)$. Appendix to S. Goette and J. Nordström, "Nu-invariants of extra-twisted connected sums", (5 pages, submitted). arXiv:2010.16367

(with O. Lechtenfeld) Computing the potential [appendix to "A hyperbolic Kac-Moody Calogero model", by O. Lechtenfeld], (5 of 27 pages, submitted). arXiv:2203.06519

(with K. Bönisch A. Klemm, and E. Scheidegger) D-brane masses at special fibres of hypergeometric families of Calabi-Yau threefolds, modular forms and periods. (78 pages, submitted). arXiv:2203.09426,

A short proof of the Ramanujan partition congruences. Preprint, 1 page

(with D. Yang) Mapping partition functions, (72 pages, submitted). arXiv:2308.03568

(with F. Cléry, E. Ferapontov, and A. Odesskii) Integrable Lagrangians and Picard modular forms. Preprint, 43 pages

In preparation:

(with S. Garoufalidis and R. Kashaev) An $SL_2(\mathbb{Z})$-extension of Faddeev's quantum dilogarithm. Current length 58 pages 21 pages

(with A. Taormina and K. Wendland) Gepner models and modular forms. Current length 22 pages

(with M. Kreck) What are the Betti numbers of smooth manifolds? Current length 21 pages

(with M. Kreck) Topology to number theory to quantum field theory/ Current length 8 pages

(with S. Garoufalidis) Smooth truncation of factorially divergent series. Current length 6 pages

(with J. Stienstra) Quasimodular forms, bimodular forms, and the holomorphic anomaly equation. Current Length 21 pages

(with K. Nagatomo) $\mathfrak{sl}_2$-algebras I: Rankin-Cohen algebras and associative $\mathfrak{sl}_2$-algebras. Current length 58 pages

(with K. Nagatomo) $\mathfrak{sl}_2$-algebras II: Conformal algebras and Lie $\mathfrak{sl}_2$-algebras. Current length 37 pages

Reduction theory and periods of modular forms. Current length 6 pages

(with S. Garoufalidis and S. Murthy) Multiple sine functions and meromorphic quantum Jacobi forms. Current length 32 pages

(with S. Murthy) Torus integrals and mock modular forms. Current length 22 pages

(with J. Guo, P. Norbury and D. Yang) BGW correlators and their asymptotics. Current length 13 pages

(with Stavros Garoufalidis, Peter Scholze and Campbell Wheeler) The Habiro ring of a number field. Current length 26 pages

(with J. Guo and D. Yang) Conjectural asymptotics of psi-class intersection numbers. Current length 14 pages

(with S. Scott) An elementary proof of the analytic Atiyah-Singer index formula. Current length 16 pages

(with N. Raulf) Spectral decomposition and the Rankin-Selberg method. Current length 13 pages

(with A. Dabholkar and U. Moitra) On Witten's open string computation. Current length 2 pages

Book projects:

(with A. Dabholkar and S. Murthy) Quantum Black Holes and Mock Modular Forms. Current length 320 pages

(with T. Ibukiyama) Higher Spherical Polynomials. Current length 221 pages

(with K. Nagatomo) Vertex Operator Algebras and Modular Forms. Current length 89 pages

(with P. Gunnells and F. Hirzebruch) The Atiyah-Singer Index Theorem and Elementary Number Theory. Current length 451 pages

(with H. Bachmann and U. Kühn) Combinatorial Modular Forms and Multiple Eisenstein Series. Current length 36 pages

Quadratic Fields and Zeta Functions. Current length ca. 200 pages

Planned or in progress:

(with Emanuel Carneiro) Study of Gegenbauer coefficients arising from dispersive equations

Holomorphic quantum modular forms.

(with M. Nucci) An old Monthly problem and a historical riddle.

Calculations with matrix integrals.

(with Rufei Ren) An unusual combinatorial identity.

(with Masanobu Kaneko) [Finite multiple zeta values]

Appendix to paper of Ian Hambleton

(with Frank Calegari and Stavros Garoufalidis) [higher Bloch groups and units]

(with Paloma Bengoechea and Özlem Imamoglu) ["Values" of j at Markoff irrationalities]

(with Elba Garcia Failde and Di Yang) [Enumeration of triangulations and quadrangulations]

(with Ksenia Fedosova and Kim Klinger-Logan) [Inhomogeneous Bessel equations]

(with Di Yang) [Integrality properties of solutions of linear differential equations]

On very slowly convergent series

(with Stefano Marmi) [Complex Brjuno function]

(with Di Yang) [Frobenius manifolds and the Chazy equation]

(with Lothar Goettsche) [Generating functions of invariants of Hilbert schemes]

(with A. Dabholkar and U. Moitra) A closed string computation involving the Weierstrass $\wp$-function

(with S. Zwegers and H. Bekki) Holomorphic theta series attached to indefinite quadratic forms

(with Y. Kezuka) Thoughts on the Birch–Swinnerton-Dyer conjecture

(with H. Bekki) Toroidal modular forms and the zeros of the Riemann zeta function