

Luca Candelori

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| CONTACT INFORMATION | Department of Mathematics Wayne State University Detroit, MI, USA 48202 | candelori@wayne.edu https://s.wayne.edu/candelori |
| RESEARCH INTERESTS | Algebra, Number Theory, Quantum Computing and Quantum Information Science. | |
| CURRENT EMPLOYMENT | Wayne State University Dept. Mathematics, Assistant Professor, 2018 - present | |
| PAST EMPLOYMENT | University of Hawaii Dept. Mathematics, Temporary Assistant Professor, 2017 - 2018 Louisiana State University Dept. Mathematics, Postdoctoral Researcher, 2014 - 2017 | |
| EDUCATION | McGill University Ph.D. (2014), M.Sc. (2010) in Mathematics (adviser: Henri Darmon) Harvard University A.B. (2008) in Mathematics with High Honors | |
| GRANTS | U.S. Department of Energy (DOE), Basic Energy Sciences, Materials and Chemical Sciences Research to Advance Quantum Information Science. Co-PI, 3,300,000 US\$, 2021-2024. Wayne State OVPR Faculty Competition for Post-Doctoral Fellows. PI, 60,000 \$, 2022-2024. | |
| PUBLICATIONS | L. Candelori, V. Chernyak, J.Klein, N. Rekuski, <i>Effective Rationality for local unitary invariants of mixed states of two qubits</i> , submitted, arXiv:2305.16178 (2023). L. Candelori, V. Chernyak, J.Klein, N. Rekuski, <i>Rational Local Unitary Real Invariants of Mixed States of Two Qubits</i> , submitted, arXiv:2304.13555 (2023). L. Candelori, Y. Patel, <i>Minimal integral models for principal series Weil characters</i> , accepted, Comm. Algebra (2022). L. Candelori, A. Salch, <i>The topological Petersson product</i> , submitted (2022), arXiv:2202.13171 [math.AT] L.Cavaletto, L.Candelori, A. Matos-Abiague, <i>Quantum Neuron with Separable-State Encoding</i> , preprint (2022), arXiv:2202.08306 [quant-ph] L. Candelori, A. Salch, <i>Topological Hecke eigenforms</i> , submitted (2022), arXiv:2201.00899 [math.AT] L.Candelori, <i>Eichler Cohomology: a view of Ramanujan's mock modular forms</i> , to appear in the Encyclopedia of Srinivasa Ramanujan and His Mathematics, eds. K. Alladi, G. E. Andrews, B. C. Berndt and K. Ono, Springer (2021). L. Candelori, <i>The algebraic functional equation of Riemann's theta function</i> , Ann. Inst. Fourier, 70, no.2 (2020). | |

L. Candelori, J. Fogliasso, C. Marks, S. Moses *Period relations for Riemann surfaces with many automorphisms*, Contemp. Math, 753 (2020).

L. Candelori, C. Franc, *Vector bundles and modular forms for fuchsian groups of genus zero*, Communications in Number Theory and Physics, Vol. 13, No. 3 (2019).

L. Candelori, *The Chevalley-Weil formula for orbifold curves*, SIGMA 14, 071 (2018).

L. Candelori, T. Hartland, C. Marks, D. Yepez *Indecomposable vector-valued modular forms and periods of modular curves*, Res. in Number Theory, Vol. 4, No. 2 (2018)

L. Candelori, *The transformation laws of algebraic theta functions*, preprint, arXiv: 1609.04486 [math.AG.NT].

L. Candelori, C. Franc, G. Kopp *Generating weights for the Weil representation attached to an even order cyclic quadratic module*, J. Number Theory, 180, pp. 474-497 (2017)

L. Candelori, F. Castella *A geometric perspective on p -adic properties of mock modular forms*, Research in the Mathematical Sciences, 4:5, (2017).

L. Candelori, C. Franc, *Vector valued modular forms and the modular orbifold of elliptic curves*, Int. J. Number Theory vol. 13(1), (2017).

L. Candelori, *Harmonic weak Maass forms: a geometric approach*, Math. Ann. vol. 360 (1-2), pp. 489-517 (2014)

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| POSTDOCS MENTORED | Nick Rekuski, 2022-2024, joint funding from U.S. Department of Energy and Wayne State OVRP. |
| PH.D DISSERTATIONS DIRECTED | Yatin Patel, 2022, <i>Minimal integral models for principal series Weil characters</i> . Diego Yepez, expected graduation 2024. Jack Fogliasso, expected graduation 2026. |
| UNDERGRADUATE RESEARCH | Lucas Huss, UROP 2022-2023 (joint w. Alex Matos-Abiague) London Cavaletto, UROP 2020-2021 (joint w. Alex Matos-Abiague) |
| SELECTED INVITED TALKS AND CONFERENCES | 35th Automorphic Forms Workshop, Louisiana State University, 5/2023 (co-organizer) CMS Summer Meeting, Arithmetic Geometry, Ottawa 6/2021 (online) AMS-Central Sectional Meeting, UW-Madison, 9/2019 Southern Regional Number Theory Conference, 4/2019 Vertex operator algebras, number theory, and related topics, Sacramento, CA, 6/2018 AMS-Western Sectional Meeting, Portland State, Oregon 4/2018 Colloquium, Wake Forest University, NC 2/2017 Colloquium, Concordia University, Montreal, Canada, 1/2017 Montreal-Toronto Number Theory Workshop, Montreal, Canada, 12/2016 BC/MIT Number Theory Seminar, MIT, Cambridge, MA, 11/2016 Emory University Number Theory Seminar, Atlanta, GA 11/2016 Quebec-Vermont Number Theory Seminar, Montreal, Canada, 10/2016 BIRS Workshop in Modular Forms and String Theory, Banff, AB, Canada, 9/2016 Connecticut Summer School in Number Theory, U. Connecticut, 8/2016 |

30th Automorphic Forms Workshop, Wake Forest University, 3/2016
 Special session on Automorphic Forms, Joint AMS-MAA Meeting, 1/2015
 Princeton-IAS Number Theory Seminar, IAS, Princeton, NJ, 10/ 2014
 Canadian Mathematical Society Winter 2012 meeting, Montreal, Canada, 10/2012
 Graduate Student Plenary Speaker, PANTS XV , Clemson University, 2/2011

SERVICE

Referee for *Memoirs of the American Mathematical Society*, *Research in the Mathematical Sciences*, *International Journal of Number Theory*, *Journal of the London Mathematical Society*, *The Ramanujan Journal*, *Journal of Geometry and Physics*, *SIGMA*.

Co-organizer of the Colloquium, Algebra Seminar, Modular forms seminar and Owens Lecture Series, Wayne State, 2018-present.

Organizer of the Number Theory Seminar, UH Manoa, 2017-18.

Co-organizer of the Southern Regional Number Theory Conference, LSU, 4/2017.

Organizer of the Algebra & Number Theory Seminar, LSU, 2016-17.

Co-organizer of the Workshop on Algebraic Varieties, Hypergeometric Series, and Modular Forms, LSU, Baton Rouge, LA, 4/2015.

TEACHING

Curriculum development: MAT/PHYS 6480, *Introduction to Quantum Computing and Quantum Information Science* (joint with Alex Matos-Abiague), Wayne State University.

Undergraduate Courses: Calculus 1,2,3, Ordinary Differential Equations, Linear Algebra, Abstract Algebra.

Graduate Courses: Advanced Algebra, Algebraic Number Theory, Modular Forms, Introduction to Quantum Computing and Quantum Information Science.

LANGUAGES

English, Italian.