

CURRICULUM VITAE MATTEO LONGO

DATI PERSONALI

- Nato a Venezia il 24 marzo 1976.
- email: matteo.longo@unipd.it
- Posizione attuale: Professore ordinario, Dipartimento di matematica *Tullio Levi-Civita*, Università degli studi di Padova.

STUDI E CARRIERA ACCADEMICA

- Laurea in matematica, con lode, Padova, Luglio 2000.
- Dottorato in matematica, Padova, Novembre 2004 (direttore di tesi: Professor Massimo Bertolini).
- Novembre–Dicembre 2004: post-doc (progetto COFIN PRIN 2002 Geometria delle Varietà Algebriche)
- Gennaio–Giugno 2005: post-doc presso Institut de Recherche Mathématique Avancée in Strasbourg (France).
- Settembre–Dicembre 2005: post-doc presso Centre de Recherches Mathématiques at Montréal (special year Analysis in Number Theory 2005-2006).
- Gennaio–Ottobre 2006: post-doc presso Max-Planck-Institut für Mathematik, Bonn (Germany).
- Ottobre 2006–Novembre 2009: Ricercatore universitario, Dip. Matematica *F. Enriques*, Milano.
- Dicembre 2009–Giugno 2016: Ricercatore universitario confermato, Dipartimento di Matematica, Padova.
- Giugno 2016–Luglio 2021: Professore associato, Dipartimento di Matematica, Padova.
- Luglio 2021, Professore ordinario, Dipartimento di Matematica *Tullio Levi-Civita*, Padova.

PUBBLICAZIONI

- (1) Bertolini, Massimo ; Longo, Matteo ; Venerucci, Rodolfo . The anticyclotomic main conjectures for elliptic curves. Math. Ann. 395 (2026), no. 2, Paper No. 34, 65 pp.

- (2) Balasubramanyam, Baskar ; Bergdall, John ; Longo, Matteo . A p -adic adjoint L -function and the ramification locus of the Hilbert modular eigenvariety. *Tunis. J. Math.* 7 (2025), no. 3-4, 515–588.
- (3) Kim, Chan-Ho, Longo, Matteo. An explicit comparison of anticyclotomic p -adic L -functions for Hida families, *Int. J. Number Theory* 19 (2023), no. 09, 2021–2050.
- (4) Kim, Chan-Ho, Longo, Matteo. Anticyclotomic main conjecture and the non-triviality of Rankin-Selberg L -values in Hida families, *J. Number Theory* 250 (2023), 183–205.
- (5) Longo, Matteo . A p -adic Maass-Shimura operator on Mumford curves. *Ann. Math. Qué.* 47 (2023), no. 1, 139–175.
- (6) Longo, Matteo, Pati Maria Rosaria (2021). Generalized Heegner cycles on Mumford curves, *MATHEMATISCHE ZEITSCHRIFT*, vol. 297, p. 483–515.
- (7) Longo M., Vigni S. On Bloch–Kato Selmer groups and Iwasawa theory of p -adic galois representations. *NEW YORK JOURNAL OF MATHEMATICS*, vol. 27, p. 437–467.
- (8) Longo Matteo, Nicole Marc-Hubert (2020). Λ -adic families of Jacobi forms, *Res. Number Theory* 6, paper n. 21, 24 pp.
- (9) Longo Matteo, Martin Kimball, Hu Yan (2020). Rationality of Darmon points over genus fields of non-maximal orders. *Ann. Math. Qué.* 44, no. 1, 173–195.
- (10) Longo Matteo, Vigni Stefano (2019). Kolyvagin systems and Iwasawa theory of generalised Heegner cycles. *Kyoto J. Math.* 59, no. 3, 717–746.
- (11) Longo Matteo, Vigni Stefano (2019). Plus/minus Heegner points and Iwasawa theory of elliptic curves at supersingular primes. *Boll. Unione Mat. Ital.*, no. 3, 315–347.
- (12) Longo Matteo, Nicole Marc-Hubert (2019). The p -adic variation of the Gross-Kohnen-Zagier theorem. *Forum Math.* 31, no. 4, 1069–1084.
- (13) Longo Matteo, Rotger Victor, de Vera Piquero Carlos. (2018). Heegner points on Hijikata-Pizer-Shemanske curves and the Birch and Swinnerton-Dyer conjecture. *Publ. Mat.* 62, no. 2, 355–396.
- (14) Longo Matteo, Pati Maria Rosaria (2018) Exceptional zero formulae for anticyclotomic p -adic L -functions of elliptic curves in the ramified case. *J. Number Theory* 190, 167–211.
- (15) Longo, Matteo Mao, Zhengyu (2018). Kohnen’s formula and a conjecture of Darmon and Tornaríá. *Transactions of the American Mathematical Society*, vol. 370, p. 73–98.
- (16) Longo Matteo, Castella Francesc, Kim Chan-Ho (2017). Variation of Anticyclotomic Invariants in Hida families, *Algebra Number Theory*, Volume 11, Number 10, p. 2339–2368.

- (17) Heidaryan Bahar, Longo Matteo, Peruginelli Giulio (2017). Galois structure on integral valued polynomials. *Journal of Number Theory*, Volume 171, p. 198-212.
- (18) Longo Matteo, Vigni Stefano (2017). A refined Beilinson-Bloch conjecture for motives of modular forms. *Transactions of the American Mathematical Society*, vol. 369, p. 7301-7342.
- (19) Castella Francesc, Longo Matteo (2016). Big Heegner points and special values of L-series. *Annales Mathématiques du Québec*, vol. 40, p. 303-324.
- (20) Longo Matteo, Vigni Stefano (2016). Quaternionic Darmon points on abelian varieties. *Rivista di Matematica della Università di Parma*, vol. 7, p. 39-70.
- (21) Longo Matteo, Vigni Stefano (2014). The Rationality of Quaternionic Darmon Points Over Genus Fields of Real Quadratic Fields. *International Mathematics Research Notices*, vol. 13, p. 3632-3691.
- (22) Longo Matteo, Vigni Stefano (2014). Vanishing of special values and central derivatives in Hida families. *Annali della Scuola Normale Superiore di Pisa. Classe di Scienze*, vol. XIII, p. 859-888.
- (23) Longo Matteo, Nicole Marc-Hubert (2013). The Λ -Adic Shimura-Shintani-Waldspurger Correspondence. *Documenta Mathematica*, vol. 18, p. 1- 21.
- (24) Longo Matteo, Nicole Marc-Hubert (2013). The Saito-Kurokawa lifting and Darmon points. *Mathematische Annalen*, vol. 356, p. 469-486.
- (25) Longo Matteo, Rotger Victor, Vigni Stefano (2013). Special values of L-functions and the arithmetic of Darmon points. *Journal für die Reine und Angewandte Mathematik*, vol. 684, p. 199-244.
- (26) Longo Matteo, Rotger Victor, Vigni Stefano (2012). On rigid analytic uniformization of Jacobians of Shimura curves. *American Journal of Mathematics*, vol. 134, p. 1197-1246.
- (27) Longo Matteo (2012). Anticyclotomic Iwasawa's Main Conjecture for Hilbert modular forms. *Commentarii Mathematici Helvetici*, vol. 87, p. 303- 353.
- (28) Longo Matteo, Vigni Stefano (2012). A note on Control Theorems for quaternionic Hida families of modular forms. *International Journal of Number Theory*, vol. 8, p. 1425-1462.
- (29) Longo Matteo, Vigni Stefano (2011). Quaternion algebras, Heegner points and the arithmetic of Hida families. *Manuscripta Mathematica*, vol. 135, p. 273- 328.
- (30) Balasubramanyam Baskar, Longo Matteo (2011). Λ -adic modular symbols over totally real fields. *Commentarii Mathematici Helvetici*, vol. 86, p. 841-865.
- (31) Longo Matteo, Vigni Stefano (2010). On the vanishing of Selmer groups for elliptic curves over ring class field. *Journal of Number Theory*, vol. 130, p. 128-163.

- (32) Longo Matteo, Vigni Stefano (2010). An irreducibility criterion for group representations with arithmetic applications. *Proceedings of the American Mathematical Society*, vol. 138, p. 3437-3447.
- (33) Longo Matteo (2007). Euler systems obtained from congruences between Hilbert modular forms. *Rendiconti del Seminario Matematico dell'Università di Padova*, vol. 118, p. 1-34.
- (34) Longo Matteo (2006). On the Birch and Swinnerton-Dyer conjecture for modular elliptic curves over totally real fields. *Annales de l'institut Fourier*, vol. 56, p. 689-733.

TALKS (SELEZIONE)

- Number Theory seminar, Bielefeld, 2006.
- Arithmetic Theta Series and p -adic Modular Forms 3-7 June 2024, Cetraro (Italy)
- Number Theory seminar, Caen, France, April 2024
- Number Theory seminar, ICTP Trieste, October 2023.
- Algebra and Number Theory Seminar, Dublin, Ireland, Feb. 2022
- CMS 75th Anniversary Summer Meeting, Ottawa, June 2021.
- Number Theory Seminar, *Kolyvagin Conjecture and Bloch-Kato formula for modular forms*, Poznan, Polonia, Gennaio 2020.
- Number Theory Day, IISER Pune (India), Feb. 2020.
- p -adic modular forms and p -adic L -functions, Como, Italy, May 2019.
- p -adic modular forms, Journées Arithmétiques XXXI, Istanbul, July 2019.
- Number Theory Seminar, *Anticyclotomic Iwasawa Main Conjectures for elliptic curves*, Regensburg, Germania, Giugno 2018.
- Special Values of Automorphic L -functions and Associated p -adic L -Functions, CMO-BIRS, Oaxaca, Messico, September-October 2018.
- The Quebec-Vermont number theory seminar (Montreal, Canada), *On the p -adic variation of the Gross-Kohnen-Zagier Theorem*, Novembre 2017.
- Workshop on p -adic L -functions and algebraic cycles. Taipei (Taiwan), September 2017.
- Automorphic Motives, Euler Systems and p -adic L -functions, Nisyros island, Greece, July 2017.
- Oberseminar, University of Duisburg-Essen (Germania), *On the p -adic variation of the Gross-Kohnen-Zagier Theorem*, Ottobre 2017.
- Number Theory Seminar, Tate Institute, Mumbai (India), *Anticyclotomic Iwasawa main conjecture for elliptic curves*, Novembre 2016.
- Représentations p -adiques et fonctions L , Bordeaux (France), May 2016.

- Number Theory Seminar, IISER, Pune (India), *Anticyclotomic Iwasawa main conjecture for elliptic curves*, Novembre 2016.
- Terzo Incontro Italiano di Teoria dei Numeri, Pisa, September 2015.
- p -adic Hodge theory and Iwasawa theory, Bielefeld, Germany, September 2015.
- p -adic methods in the theory of classical automorphic forms, CRM Montreal, Canada, March 2015.
- Workshop on Galois Representations, Heidelberg, Germania, Feb. 2015.
- The Mathematics Colloquium at Rutgers (Newark Univ., NJ, USA), *Heegner Points and Arithmetic of Elliptic Curves*, Febbraio 2014.
- p -adic Methods in Number Theory, Università Statale di Milano, October 2014.
- Arithmetic intersection theory and Shimura varieties, Hausdorff Research Institute of Mathematics, Bonn, Germany, Feb. 2014.
- Modular forms, p -adic L -functions and Selmer groups, Oriahovitza, Bulgaria, July 2013.
- Effective methods for Darmon points, Benasque, Spagna, August 2013.
- UCLA Colloquium of the Department of Mathematics (University of California, Los Angeles, USA), *Heegner points and the arithmetic of elliptic curves: classical results and generalizations*, Ottobre 2012.
- UCLA Number Theory Seminar (University of California, Los Angeles, USA), *Quaternionic Darmon points and arithmetic applications*, Ottobre 2012.
- Séminaire Groupes Réductifs et Formes Automorphes, Institut de Math. de Jussieu (Parigi, Francia), *Saito-Kurokawa lifting and Darmon points*, Ottobre 2012.
- Quebec-Vermont Number Theory Seminar, McGill University (Montreal, Canada), *Variation of Gross-Heegner points in Hida families*, Ottobre 2011.
- Number Theory Seminar, Max-Planck-Institut für Mathematik (Bonn, Germania), *Quaternionic Darmon points and arithmetic applications*, Settembre 2011.
- Cycles on modular varieties, BIRS, Banff, Alberta, Canada, November 2011.
- Seminar de Teoria de Nombres, CRM (Barcelona, Spagna) *On rigid analytic uniformization of Jacobians of Shimura curves and applications*, Marzo 2010.
- Special Values of L -functions and Arithmetic Geometry, Miyama, Japan, October 2010.
- Seminar de Teoria de Nombres, U. Politècnica de Catalunya (Barcelona, Spagna) *On the Birch and Swinnerton-Dyer conjecture for elliptic curves over ring class fields*, Ottobre 2008.
- Séminaire de Théorie des Nombres, Institut Fourier (Grenoble, Francia), *p -adic L -functions in two variables attached to nearly ordinary families of*

Hilbert modular forms, Aprile 2008.

- Number Theory Seminar, Max-Planck-Institut für Mathematik, (Bonn, Germania), *On the Birch and Swinnerton-Dyer conjecture over totally real fields*, Marzo 2006.
- International Conference on Arithmetic Algebraic Geometry, El Escorial, Spagna, September 2006.
- Centre de Recherches Mathématiques (Montréal, Canada), *On the Birch and Swinnerton-Dyer conjecture over totally real fields*, Dicembre 2005.

ATTIVITÀ AMMINISTRATIVA (SELEZIONE)

- Coordinatore della *Commissione Scientifica d'Area* per l'area 01, Padova, dal 2023.
- Membro del *Senato Accademico* of the University of Padova, 2015-2019
- Membro del collegio docenti dottorato, University of Padova, dal 2017.

ATTIVITÀ EDITORIALE

- Editor in Chief dei *Rendiconti del Seminario Matematico dell'Università di Padova*, da Gennaio 2026, in precedenza Associate Editor.
- *Elliptic curves and modular forms in arithmetic geometry* Springer Proc. Math. Stat., 527, Springer, 2026.

PROGETTI NAZIONALI

PRIN 2022, *Arithmetic of motives and L-functions*, coordinatore locale (unità di Padova).

ORGANIZZAZIONE DI SCUOLE E CONFERENZE

- Membro del comitato scientifico e organizzatore del network *Arithmetica Transalpina*
<https://people.math.ethz.ch/~zerbess/ArithmeticaTransalpina.html>
- *Elliptic curves and modular forms in arithmetic geometry*, *Celebrating Massimo Bertolini's 60th birthday*, Milano, Italy, Sept. 12-16 2022.
- *Recent advances in the arithmetic of Galois representations*, Genova, Italy, 15-19 July 2019.
- Number Theory session at UMI Conference 2019, Pavia, Italy
- Special trimester *p-adic Langlands Program*, May-July 2019, Padova, Italy.
- Summer school *Serre Conjectures and p-adic Langlands Program* May-June 2019, Padova, Italy,
- *Summer School and Workshop on Modular forms*, Padova, Italy.
- Summer school *Perfectoid Spaces*, Brixen, Italy.

- *Algant Summer School on Monodromy*, Dobbiaco, Italy.

INSEGNAMENTO

Direzione tesi di dottorato.

- Eduardo Walchek (Padova, XXXVI ciclo). Title of the thesis *Specializations of quaternionic big Heegner classes*.
- Shilun Wang (Padova XXXVI ciclo (Chinese Scholarship Council)).
- Daniele Troletti (Padova, XXXV ciclo). Title of the thesis: *On the p -part of the Birch and Swinnerton-Dyer Conjecture for elliptic curves over totally real fields*.
- Luca Mastella (Padova, XXXV ciclo). Title of the thesis *On Iwasawa Theory of modular forms and structure theorems of Selmer groups*.
- Hu Yan (Padova, XXXI ciclo). *Rationality of Darmon points over genus fields of non-maximal orders*.
- Guhanvenkat Harikumar (Padova, XXVII ciclo, Algant Ph.D.), *Darmon cycles and the Kohnen-Shintani lifting*.

Tesi magistrali.

- Francesco Feltrin, *Kolyvagin's work on modular elliptic curves*, a.a. 2025/2026
- Francesco Barban, *Modularity theorem for semistable elliptic curves*, a.a. 2024/2025.
- Michele Berbamaschi, *The first étale cohomology group of an elliptic curve*, a.a. 2024/2025.
- Pietro Serafin, *Kolyvagin's work on elliptic curves*, a.a. 2024/2025.
- Enrico Da Ronche, *Class Field Theory and Elliptic Curves with Complex Multiplication*, a.a. 2022/2023.
- Lucia Onofrio, *Iwasawa Main conjecture and Euler systems*, a.a. 2023/2024.
- Ravi Ferigo, *Introduction to p -divisible groups*, a.a. 2022/2023.
- Francesco Zerman, *The Iwasawa Main Conjecture for elliptic curves and its applications to Birch and Swinnerton-Dyer conjecture*, a.a. 2019-2020, Padova.
- Lorenzo Stefanello, *Euler systems and Iwasawa Theory: A proof of the Main Conjecture*, a.a. 2019-2020, Padova.
- Casper Barendrecht, *Shafarevich-Tate groups for some Modular Abelian Varieties*. a.a. 2019-2020, Padova.
- Giuseppe Romanazzi, *Rational points on elliptic curves*, a.a. 2019-2020, Padova.
- Alessandro Guaglianone *Fattorizzazione di interi e algoritmo di Lenstra*, a.a. 2019-2020, Padova.

- Ersilia Silvestri, *Complex multiplication on elliptic curves*, a.a. 2018-2019, Padova.
- Luca Lovato, *Stark's Conjecture*, a.a. 2018-2019, Padova.
- Alberto Busatto, *Homology and Cohomology for orientable manifolds*, a.a. 2017-2018, Padova.
- Alessia Trovò, *Un'introduzione all'Ultimo Teorema di Fermat*, a.a. 2017-2018, Padova.
- Chiara Dellantonio, *Solvable points on elliptic curves*, a.a. 2015-2016, Padova.
- Antonio Cauchi, *Kolyvagin's method for modular curves* a.a. 2013-2014, Padova.
- Gabriele Bogo, *A refined Birch and Swinnerton-Dyer conjecture* a.a. 2013-2014, Padova.
- Anna Stawska, *Beilinson's formula*, Algant Master Thesis, a.a. 2013-2014, Padova.
- Dipayan Chakraborty, *Mordell-Weil Theorem and the Birch and Swinnerton-Dyer Conjecture* Algant Master Thesis, a.a. 2011-2012, Padova.

Tesi triennali.

- Alvise Luca Vianello, *Periodi di Curve Ellittiche e Funzioni Ipergeometriche*, 2024/2025
- Orazio Giulio Cherubini, *Curve Modulari come Spazi di Moduli di Curve Ellittiche* a.a. 2023-2024, Padova.
- Leonardo Gagliardoni, *Curve ellittiche: la Famiglia di Legendre* a.a. 2023-2024, Padova.
- Erik Chinellato, *Il gruppo fondamentale di un grafo e applicazioni alla teoria dei gruppi*, a.a. 2019-2020, Padova.
- Andrea Taccani, *A concise introduction to the Langlands program*, a.a. 2023/2024.
- Francesco Tonon, *A p -adic uniformization of elliptic curves*, a.a. 2023/2024.
- Mattia Oberto, *Trattazione di alcune classi particolari di equazioni diofantee*, a.a. 2022-2023, Padova.
- Francesco Barban, *Elliptic curves and the congruent number problem*, a.a. 2022-2023, Padova.
- Giulia Fontanella, *Introduzione all'omologia singolare*, a.a. 2017-2018, Padova.
- Simone Pelizzola, *Curve ellittiche e numeri congruenti*, a.a. 2017-2018, Padova.
- Giacomo Negrisola, *Un'introduzione alle forme modulari: il problema dei quattro quadrati*, a.a. 2017-2018, Padova.
- Massimo Cosimo, *Curve ellittiche e numeri congruenti*, a.a. 2017-2018, Padova.

- Giacomo Vianello, *Il gruppo fondamentale di un grafo*, a.a. 2017-2018, Padova.
- Marco Dall'Alba, *Introduzione all'omologia singolare e applicazioni al gruppo fondamentale*, a.a. 2017-2018, Padova.
- Giulia Cicognani, *Moduli su anelli principali*, a.a. 2016-2017, Padova.
- Ilaria Prosepe, *Introduzione alla teoria algebrica dei numeri*, a.a. 2016-2017, Padova.
- Daniele Troletti, *Il teorema dei quattro quadrati*, a.a. 2016-2017, Padova.
- Luca Lovato, *Teoria di Galois infinita*, a.a. 2016-2017, Padova.
- Flavio Perissinotto, *Il Problema dei Numeri Congruenti*, a.a. 2016-2017, Padova.
- Ersilia Silvestri, *Il Teorema dei quattro quadrati*, a.a. 2016-2017, Padova.
- Giada Volpato, *Introduzione alla teoria dell'omologia singolare*, a.a. 2015-2016, Padova.
- Giovanni Niero, *Risolubilità per radicali reali*, a.a. 2015-2016, Padova.
- Roberto Moreschini, *Decomposizione di primi in campi ciclotomici*, a.a. 2015-2016, Padova.
- Alberto Corato, *Forme modulari*, a.a. 2015-2016, Padova.
- Riccardo Falconi, *Le Curve Modulari*, a.a. 2015-2016, Padova.
- Beatrice Stivanello, *Teoria di Galois infinita*, a.a. 2014-2015, Padova.
- Francesco Delfina, *Teoria di Galois delle algebre étale*, a.a. 2014-2015, Padova.
- Claudia Dario, *Teoria di Galois dei polinomi reciproci*, a.a. 2013-2014, Padova.
- Nicola Simionato, *Il teorema di Kronecker-Weber*, a.a. 2013-2014, Padova.
- Pietro Gatti, *Curve ellittiche e numeri congruenti*, a.a. 2012-2013, Padova.
- Marina Casson, *L'Ultimo Teorema di Fermat*, a.a. 2011-2012, Padova.

Corsi (Padova, recenti).

- Matematica, Laurea in Chimica, 2023-2026.
- Istituzioni di Matematica, Laurea in Diritto e Tecnologia, 2025.
- Number Theory 1, 2022-2024
- Number Theory 2, 2025-2026
- Algebra lineare, Ing. Chimica e dei materiali, 2010-2021.
- Geometria II, Padova, 2020-2022.
- Topologia Padova, 2015-2020.