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Research Interests

- Number Theory (Iwasawa Theory, Arithmetic of Automorphic Forms),
- Error-Correcting Codes.

Work Experience/Academic Positions

- October 17 - present : Associate Professor in the Department of Mathematical Sciences, Durham University.
- October 13 - September 17: Lecturer in the Department of Mathematical Sciences, Durham University.
- November 06 - September 13: Research Associate (*Akademischer Mitarbeiter*), member of the Arithmetic Geometry Group of Professor Otmar Venjakob at the Institute of Mathematics of the University of Heidelberg.
- October 05 - October 06: Research Associate (*Akademischer Mitarbeiter*), member of the Arithmetic Geometry Group of Professor Otmar Venjakob at the Institute of Mathematics of the University of Bonn.
- October 99 - May 02: Teaching Assistant, Computer Science Department, Boston University, USA.

Education

- October 03-May 06: **Ph.D in Mathematics**,
Department of Pure Mathematics and Mathematical Statistics, University of Cambridge, UK,
Thesis : *L-functions of elliptic curves and false Tate curve extensions*,
Supervisor: Professor John H. Coates.
- October 02-June 03: **Certificate of Advanced Study in Mathematics (Part III)**,
Department of Pure Mathematics and Mathematical Statistics, University of Cambridge, UK,
Grade: Distinction.
- October 99-June 02: **Master in Computer Science**,
Department of Computer Science, Boston University, U.S.A,
G.P.A: 3.96/4.00 (A),
Thesis: *Error Correcting Codes over Algebraic Surfaces*, under the supervision of Professor Peter Gacs.
- October 94-June 99: **Diploma in Computer Engineering and Informatics**,
School of Engineering, University of Patras, Greece,
G.P.A: 8.82/10.00 (Excellent).

Publications

1. Th. Bouganis, *On special L-values attached to metaplectic modular forms*, Math. Z. 3-4, (2018), p. 725-740.
2. Th. Bouganis, *p-adic measures for Hermitian modular forms and the Rankin-Selberg method*, in Elliptic Curves, Modular Forms and Iwasawa Theory, in Honour of John Coates' 70th birthday, D. Loeffler and S. Zerbes eds, Springer Proceedings in Mathematics and Statistics series, (2016), p. 33-86
3. Th. Bouganis, *On the algebraicity of special L-values of Hermitian modular forms*, Documenta Mathematica 20, (2015),p. 1293-1329,
4. Th. Bouganis, *Non-abelian p-adic L-functions and Eisenstein series of unitary groups; the CM method*, Annales de l' Institute Fourier, Vol. 64 no. 2 (2014),p. 793-891,
5. Th. Bouganis, *On Special L-Values attached to Siegel Modular Forms*, In Iwasawa Theory 2012 - State of the Art and Recent Advances, Contributions in Mathematical and Computational Science, Springer (Th. Bouganis and O. Venjakob eds) (2014), p. 135-176
6. Th. Bouganis, *The Möbius-Wall congruences for p-adic L-functions of CM elliptic curves*, Math. Proc. Camb. Phil. Soc., vol 156 (1). (2014), p. 183-192.
7. Th. Bouganis, *Non abelian congruences between special values of L-functions of elliptic curves; the CM case*, International Journal of Number Theory, Vol 7, No. 7 (2011), p. 1883-1934,
8. Th. Bouganis and O. Venjakob, *On the non-commutative Main Conjecture for elliptic curves with Complex Multiplication*, Asian J. Math., vol 14 (3) (2010), p. 385-416,
9. Th. Bouganis, *Special values of L-functions and false Tate curve extensions*, (with an appendix by V. Dokchitser), J. London Math. Soc., Vol. 82 (2), (2010), p. 596-620,
10. Th. Bouganis and V. Dokchitser, *Algebraicity of L-values for elliptic curves in a false Tate curve tower*, Math. Proc. Camb. Phil. Soc. Vol. 142 (2), (2007), p. 193-204,
11. Th. Bouganis, *Error Correcting Codes over Algebraic Surfaces*, In Applied Algebra, Algebraic Algorithms and Error-Correcting Codes, Lecture Notes in Computer Science 2643, Springer 2003, p. 169-179,
12. Th. Bouganis and D. Coles, *A Geometric View of Decoding Algebraic Geometric Codes*, In Applied Algebra, Algebraic Algorithms and Error-Correcting Codes, Lecture Notes in Computer Science 2643, Springer 2003, p. 180-190,
13. Th. Bouganis, I. Caragiannis, C. Kaklamanis, *Implementation Issues and Experimental Study of a Wavelength Routing Algorithm for Irregular All-Optical Networks*, Algorithm Engineering 1999, LNCS 1668, p. 258-270.

Other publications

1. Th. Bouganis, *Non abelian p-adic L-functions and Eisenstein series of unitary groups*, in Algebraic Number Theory, Oberwolfach Report (2011).

Preprints/Submitted Work/Work in Preparation

1. Th. Bouganis and J. Marzec, *On the analytic properties of the standard L -function attached to Siegel-Jacobi modular forms*, (55 pages), submitted.
2. Th. Bouganis and J. Marzec, *Algebraicity of special L -values attached to Siegel-Jacobi modular forms*, (20 pages), submitted.
3. Th. Bouganis and S. Mercuri, *On the Rankin-Selberg method for vector valued Siegel modular forms*, (28 pages), submitted

Theses

1. Th. Bouganis, *L -functions of elliptic curves and false Tate curve extensions*, Ph.D thesis, University of Cambridge, U.K. 2006,
2. Th. Bouganis, *Error Correcting Codes over Algebraic Surfaces*, Master thesis, Boston University, U.S.A. 2002.

Other Professional Qualifications

- Fellow of The Higher Education Academy in U.K.

Grants

- EPSRC First Grant (EP/N009266/1), title “Arithmetic of automorphic forms and special L -Values”, April 2016-April 2018, (one-year Research Associate from April 2016: Dr. Jolanta Marzec).
- London Mathematical Society Undergraduate Research Bursaries in Mathematics. Summer 2014, with Francesca Bianchi and title “Special Values of L -Functions attached to Hecke Characters”

Teaching Activity

In U.K. (Oct. 2013 - present)

1. *Number Theory III/IV*, Durham University, Michaelmas 2018,
2. *Topics in Algebra and Geometry IV*, Durham University, Michaelmas and Epiphany term 2017-2018,
3. Tutorials Linear Algebra I (three groups in Michaelmas 2017, two groups in Epiphany 2018)
4. Supervision of Project III (two students, algebraic coding theory) and Project IV (two students, algebraic geometric codes)
5. *Complex Analysis II*, Durham University, Epiphany Term 2017
6. Tutorials Complex Analysis II, Durham University, Epiphany Term 2017 (4 groups)
7. Co-supervisor of the Project “Eisenstein Series”, for 4H (6 students),
8. *Algebraic Geometry III/IV*, Durham University, Michaelmas and Epiphany Term 2015-2016,
9. Tutorials for Elementary Number Theory and Cryptography II (three groups), Durham University, Michaelmas Term 2015,

10. Project “Algebraic Curves and Coding Theory”, for 4H year students (4 students),
11. *Elementary Number Theory and Cryptography II*, Durham University, Epiphany Term 2015,
12. *Modular Forms*, MAGIC Lecture (postgraduate-level lecture courses in mathematics, using IOCOM’s Visimeet Video Conferencing technology provided by Janet), Epiphany Term 2015
13. *Elementary Number Theory and Cryptography II*, Durham University, Michaelmas Term 2014,
14. Tutorials for Elementary Number Theory and Cryptography II (five groups), Durham University, Michaelmas Term 2014,
15. Project “Topics in the Arithmetic of Elliptic Curves”, for 4H year students (3 students),
16. *Algebraic Geometry III/IV*, Durham University, Michaelmas Term 2013,
17. Tutorials for Linear Algebra (one group), Durham University, Michaelmas Term 2013,
18. Tutorials for Elementary Number Theory and Cryptography II (3 groups), Durham University, Michaelmas Term 2013,
19. Project “Algebraic Coding Theory” for 3H year students (4 students)

In Germany (2005-2013)

In the list below, the indication “SpV” (*Spezialvorlesung*) means that the course was aimed at students in their last year of their studies and graduate students. The indication “V” (*Vorlesung*) means that the course is part of the core undergraduate syllabus.

1. *Arithmetic Theory of Modular Forms* (SpV), Heidelberg, Summer semester 2013,
2. *Algebra II* (V), Heidelberg, Summer semester 2011,
3. *Algebraic Coding Theory* (SpV), Heidelberg, Fall semester 2010,
4. *p-adic Lie groups; the algebraic theory* (SpV), Heidelberg, Summer semester 2010,
5. *p-adic Lie groups; the analytic theory* (SpV), Heidelberg, Fall semester 2009,
6. *Abelian Varieties; the algebraic theory* (SpV), Heidelberg, Summer semester 2009,
7. *Abelian Varieties; the analytic theory* (SpV), Heidelberg, Fall semester 2008,
8. *Elliptic Curves with Complex Multiplication* (SpV), Heidelberg, Summer semester 2008,
9. *Cyclotomic Iwasawa Theory* (SpV), Heidelberg, Fall semester 2007,
10. *Modular Forms and L-Functions*, Heidelberg (SpV), Summer semester 2007.

I was a teaching assistant for the following courses:

1. *Algebra II*, Bonn, Summer semester 2006, instructor: Prof. Otmar Venjakob,
2. *Algebra I*, Bonn, Fall semester 2005, instructor: Prof. Otmar Venjakob.

I have been an organizer for the following undergraduate seminars:

1. *Iwasawa Theory*, (with Otmar Venjakob) Heidelberg, Summer semester 2012,
2. *The Ikeda Lift* (with Juan Cervino and Hendrik Kasten), Heidelberg, Fall semester 2011,
3. *Representation theory of finite groups* (with Otmar Venjakob), Heidelberg, Fall semester 2011,
4. *Algebraic groups* (with Otmar Venjakob), Heidelberg, Summer semester 2009,
5. *The Riemann-Roch theorem for global fields* (with Otmar Venjakob), Heidelberg, Fall semester 2008,
6. *Algebraic K-Theory* (with Otmar Venjakob), Heidelberg, Summer semester 2008,
7. *Rational Points on Elliptic Curves* (with Otmar Venjakob), Heidelberg, Fall semester 2007,
8. *Representation theory of Finite Groups* (with Otmar Venjakob), Heidelberg, Summer semester 2007,
9. *Classical and p-adic L-Functions* (with Otmar Venjakob), Heidelberg, Fall semester 2006.

Ph.D Student supervision

- Salvatore Mercuri, Oct 2015-(in progress)

Further scientific activities

- Organizer of the workshop: "Arithmetic of automorphic forms and special L-values", (Durham, March 26-27, 2018).
- Academic Visitor, Oxford University, UK, 10 Sept. - 20 Nov. 2016,
- Editor (with Otmar Venjakob) of *Iwasawa Theory 2012 - State of the Art and Recent Advances, Contributions in Mathematical and Computational Science, Springer* (2014)
- Co-organizer (with Otmar Venjakob) of the *Iwasawa 2012 Conference* Heidelberg, Germany, July 30 to August 3, 2012.
- Lecturer for the *Sardinian Summer School in Iwasawa Theory*, August 6 - August 12, 2012, Sardinia, Italy.
- Visiting Fellow, Isaac Newton Institute, Cambridge, UK, 1 Nov. - 15 Nov. 2009.
- Internal Examiner for 2 Ph.D thesis defences.
- Reviewer for (among others):
 1. *Algebra and Number Theory*,
 2. *Bulletin of LMS*
 3. *Compositio Math.*
 4. *International Journal of Number Theory*,
 5. *International Mathematics Research Notices*,
 6. *Journal of the AMS*,
 7. *Journal of LMS*
 8. *Journal für die reine und angewandte Mathematik (Crelle)*,

9. *Math. Proc. Camb. Phil. Soc.*

- I organized the following research seminars:

1. *Arithmetic Study Group*, (with Herbert Gangl, and Pankaj Vishe), October 2013 - today,
2. *The Main Conjecture for elliptic cusp forms (after Skinner and Urban)*, (with Otmar Venjakob and Jakob Stix), Summer semester, Heidelberg, 2012,
3. *Wiles' proof of the Iwasawa Main Conjecture* (with Otmar Venjakob), Summer semester, Heidelberg, 2011,
4. *Modular Curves and the Eisenstein Ideal* (with Otmar Venjakob, Jakob Stix and Jochen Gärtner), Summer semester, Heidelberg, 2010,
5. *Cup Products in Galois Cohomology* (with Otmar Venjakob and Jakob Stix), Summer semester, Heidelberg, 2009,
6. *The Eigencurve* (with Otmar Venjakob), Fall semester, Heidelberg, 2009,
7. *Hida families and Big Galois Representations* (with Otmar Venjakob and Peter Barth), Summer semester, Heidelberg, 2008,
8. *p-adic Hodge theory II* (with Otmar Venjakob), Summer semester, Heidelberg, 2007,
9. *p-adic Hodge theory I* (with Otmar Venjakob), Fall semester, Heidelberg, 2006,
10. *The anticyclotomic Main Conjecture for Elliptic Curves* (with Otmar Venjakob), Summer semester, Bonn, 2006,
11. *Non-commutative Iwasawa theory* (with Otmar Venjakob), Fall semester, Bonn, 2005.

Administrative Tasks

- International Coordinator of the Department of Mathematical Sciences, Durham University.
- Member of the Project Committee of the Department of Mathematical Sciences, Durham University (responsible for 3rd and 4th year final student projects).

Awards / Scholarships

- Rayleigh-Knight Prize, University of Cambridge, 2005.
- Scholarship for Ph.D studies from the State Scholarships Foundation of Greece, 2003-2005.
- Teaching Fellowship, Boston University, 1999-2002.

Research talks after invitation

1. *Quaternionic modular forms and the Rankin-Selberg method*, Workshop on Stark Conjectures, Iwasawa Theory and related topics, Exeter, UK, 2018
2. *On the standard L-function attached to Siegel-Jacobi modular forms of higher index*, Number Theory Seminar, Sheffield University, UK, 20.02.2018
3. *On the standard L-function attached to Siegel-Jacobi modular forms of higher index*, Number Theory Seminar, Nottingham University, UK, 7.12.2016

4. *On the standard L -function attached to Siegel-Jacobi modular forms of higher index*, Number Theory Seminar, Oxford University, UK, 24.11.2016,
5. *p -adic measures of Hermitian modular forms*, Number Theory Seminar, Basel University, 13.11.2015.
6. *p -adic measures of Hermitian modular forms*, Pure Mathematics Seminar, University of Exeter, Exeter, 22.10.2015,
7. *p -adic measures for Hermitian modular forms and the Rankin-Selberg Method*, Conference in honour of John Coates 70th birthday, Cambridge (25.03.2015-27.03.2015)
8. *On special L -Values attached to half-integral weight Siegel modular forms*, Workshop in *Arithmetic of Eisenstein Series*, Darmstadt, Germany, (22.09.2014 - 25.09.2014)
9. *Arithmetic of Siegel-type Eisenstein Series* Summer School for the Workshop Arithmetic of Eisenstein Series, Darmstadt, Germany, (20.09.2014 - 21.09.2014)
10. *Special L -Values of Siegel Modular Forms and Eisenstein Series*, WaNDA Number Theory meeting, Durham, U.K. September 2014.
11. *On special values of L -functions attached to half-integral weight Siegel modular forms*, Workshop *Bianchi and Siegel Modular Forms*, Sheffield, U.K. 2014,
12. *Special L -Values fo Hermitian and Siegel Modular Forms*, Number Theory Seminar Sheffield, U.K., 2014,
13. *p -adic measures for Hermitian Modular Forms*, Number Theory Seminar UCL, Imperial and King's College, London, U.K 2014,
14. *p -adic measures for Hermitian Modular Forms and the Rankin-Selberg Method*, Number Theory Seminar, University of Grenoble, France 2013,
15. *On special values of Siegel modular forms*, Number Theory Seminar, Bielefeld, Germany 2013,
16. *p -adic measures for Hermitian modular forms and the Rankin-Selberg method*, Workshop on Iwasawa Theory and Galois Representations, Warwick U.K. 2013,
17. *Non-abelian p -adic L -functions and Eisenstein series*, Iwasawa 2012 conference, Heidelberg, Germany, 2012,
18. *Non-abelian p -adic L -functions and Eisenstein series of unitary groups*, Number Theory Seminar, University of Cambridge, UK, October 2011,
19. *Non-abelian p -adic L -functions and Eisenstein series of unitary groups*, Number Theory Seminar, University of Warwick, UK, October 2011,
20. *Non-abelian p -adic L -functions and Eisenstein series of unitary groups*, LMS Regional meeting on Iwasawa Theory, University of Exeter, UK, October 2011,
21. *Non-abelian p -adic L -functions and Eisenstein series of unitary groups*, Seminar "Groupes Réductifs et Formes Automorphes", Jussieu, Paris, France, October 2011,
22. *Non-abelian p -adic L -functions and Eisenstein series of unitary groups*, Oberwolfach, Algebraic Number Theory conference, Germany, June 2011,
23. *Non-abelian congruences of L -values and Eisenstein series*, Instructional workshop on the noncommutative Main Conjectures, Münster, Germany, April 2011,

24. *Non abelian Iwasawa Theory and Elliptic Curves*, Mathematical Seminar, Department of Mathematics, NTUA, Athens, Greece, June 2010,
25. *Eisenstein Reihen und nicht-kommutative Kongruenzen von speziellen L-Werten*, DFG-Forschergruppe “Algebraische Zykel und L-Funktionen”, Regensburg, Germany, January 2010,
26. *Congruences between L-values and Eisenstein series*, Number Theory Seminar, Nottingham, UK, October 2008,
27. *Congruences between L-values and Eisenstein series*, Number Theory Seminar, Cambridge, UK, October 2008,
28. *L-values of elliptic curves and non-commutative Iwasawa theory*, Nachwuchskonferenz “Arithmetische Geometrie”, University of Regensburg, Germany, July 2008,
29. *Special values of L-functions and false Tate curve extensions*, Number Theory Seminar, Cambridge, UK, May 2006,
30. *Error-Correcting Codes over Algebraic Surfaces*, Applied Algebra, Algebraic Algorithms and Error-Correcting Codes, Toulouse, France, 2002.

Conferences attended

1. Workshop, Stark Conjectures, Iwasawa Theory and related topics, Exeter, UK, 2018
2. Recent Developments on Elliptic Curves, Clay Mathematics Institute Conference, Oxford University, September 2016
3. New Directions in Iwasawa Theory, Banff International Research Station, Banff, Canada, June 2016
4. Interactions between algebra, coding theory and cryptography, Workshop, Durham University, January 2016,
5. Conference in honour of John Coates 70th birthday, Cambridge March 2015,
6. Workshop in *Arithmetic of Eisenstein Series*, Darmstadt, Germany, (22.09.2014 - 25.09.2014)
7. Workshop *Bianchi and Siegel Modular Forms*, Sheffield, U.K. 2014,
8. *Modular Forms, p-adic L-functions and Selmer groups*, NIO (Oriahovitza), Bulgaria 2013,
9. *Higher Rank Automorphic Forms and L-Functions*, Warwick, U.K. 2013,
10. *Iwasawa Theory and Galois Representations*, Warwick, U.K., 2013
11. *Applications of Iwasawa Algebras*, Banff, Canada, 2013
12. *Iwasawa Conference 2012*, Heidelberg, Germany August 2012,
13. *Algebraic Cycles and L-functions*, Johannes Kepler Research Center Regensburg, Regensburg, Germany, February 2012,
14. *LMS regional meeting on Iwasawa Theory*, University of Exeter, UK, October 2011,
15. *Computations with Modular Forms*, University of Heidelberg, Germany, September 2011,
16. *Algebraische Zahlentheorie*, Oberwolfach, Germany, June 2011,

17. *Instructional workshop on the noncommutative Main Conjectures*, University of Münster, Germany, April 2011,
18. *The Arithmetic of Fundamental Groups*, University of Heidelberg, Germany, February 2010,
19. *Non-commutative Algebras and Non-commutative Iwasawa Theory*, University of Edinburgh, UK, September 2009,
20. Opening conference of the programme *Non-abelian Fundamental Groups in Arithmetic Geometry*, University of Cambridge, UK, July 2009,
21. *Algebraische Zahlentheorie*, Oberwolfach, Germany, June 2009,
22. *Iwasawa Conference 2008*, Augsburg, Germany, July 2008,
23. *Nachwuchskonferenz Arithmetische Geometrie*, University of Regensburg, Germany, July 2008,
24. *Algebraische Zahlentheorie*, Oberwolfach, Germany, June 2007,
25. *Iwasawa Conference 2006*, Limoges, France, July 2006,
26. *L-functions and Galois Representations, London Mathematical Society Conference*, Durham, UK, June 2004,
27. *Non-commutative Aspects of Number Theory*, Durham, UK, September 2003,
28. *Applied Algebra, Algebraic Algorithms and Error-Correcting Codes*, Toulouse, France 2002.

Languages

Greek (native), English, German, French (modest).