

# CURRICULUM VITAE

Dr. Valerio Talamanca

## Current Position and address

Adjunct Professor, Roma Tre University  
Dipartimento di Matematica e Fisica  
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## Education

**Ph.D. in Matematica** February 1995  
Brandeis University.  
Thesis: "Height Preserving Transformations on Linear Spaces".  
Advisor: Prof. Alan L. Mayer

**Laurea in Matematica (cum laude)** January 1989  
Università degli Studi di Roma "La Sapienza", Roma, Italia.  
Advisor : Prof. E. Sernesi.

## Professional experiences

**INdAM Associate** for the programme INdAM-DP-COFUND-2015 - EUROPEAN COMMISSION Research Executive Agency (REA) n.713485, Istituto Nazionale di Alta Matematica, Roma, Italy, 1/11/2017 -28/02/2022

**Adjunct Professor**, Roma Tre University, 01/10/1999-01/10/2001 2004-2006 and 2007-present

**Research fellow**, Department of Pure and Applied Mathematics, L'Aquila University, 01/10/2001 - 30/09/2003

**Visiting Researcher** KdV Institute for mathematics, Universiteit van Amsterdam, 01/10/1998 - 30/09/1999.

**Research Assistant**, Mathematical Institute, University of Oxford - in the framework of the EC-network Arithmetic Geometry, May 1st - June 30th 1998

**Post-Doctoral fellow**, University of Padova, Department of Pure and Applied Mathematics: April 1st 1996 - March 31st, 1998:

**Visiting Researcher**, Roma Tre University, December 1994 - March 1996, funding provided by INDAM and Fondazione Francesco Severi.

## Research Interest

Number theory, Arithmetic geometry, Algebraic geometry, Dynamical system, in particular

- Height functions on linear spaces and semisimple algebras over global fields
- Height functions on linear algebraic groups
- Abelian varieties
- Arithmetic of dynamical systems

## Fellowships and Awards

Honorary Professor, Salahaddin University, Erbil 2025-  
Fellowship of the Italian National Research Council 1998-99  
Fondazione F. Severi Prize for young mathematicians 1995  
Senior fellowship of the Istituto Nazionale di Alta Matematica 1994  
Fellowship of the Italian National Research Council for studying abroad 1991-93

## International Cooperation

**Lecturer** for the *CIMPA research school on Arithmetic in action: Number Theory and its Applications to Cryptography and Coding Theory*, Gadjah Mada University, Yogyakarta, Indonesia, July 14 - 25, 2025

**Member of the Scientific Committee and lecturer** for the *CIMPA research school on Serre's Open Image Theorem*, Universidad de Valparaiso, Valparaiso, Chile, January 6-17, 2025

**Member of the Scientific Committee and lecturer** for the *AESIM school Introduction to algebraic number theory and algebraic curves*, Mathematical Institute SASA Faculty of Mathematics, University of Belgrade, September 9-20, 2024

**Member of the Scientific Committee** for the *CIMPA research school on Lattices, Heights and Diophantine Approximation*, Urgench State University, Urgench, Uzbekistan, June 24 - July 5, 2024

**Member of the Scientific Committee and lecturer** for the *CIMPA research school on Applied Number Theory*, Ho Chi Minh City University of Education, Ho Chi Minh City, Vietnam June 3 - 14, 2024

**Member of the Scientific Committee and lecturer** for the *AESIM school Algebra, Number theory and their applications to Cryptography* Salahaddin University, Erbil, Kurdistan Region, Iraq February 25 - March 7, 2024

**Member of the Scientific Committee and lecturer** for the *CIMPA research school on Isogenies of elliptic curves and their applications to cryptography*, Universidad del Cauca, July 24th - August 4th, 2023.

**Member of the Scientific Committee and lecturer** for the *CIMPA research school on Introduction to Galois representations and modular forms and their computational aspects*, University of the Philippines Diliman January 9-20, 2023.

**Member of the Scientific Committee and lecturer** of the WAMS school: *Lattices, Diophantine Approximation and Heights* Urgench State University, Urgench, Uzbekistan June 6-10 2022

**Member of the Scientific Committee and lecturer** for the *CIMPA research school on Group Actions in Arithmetic and Geometry* Universitas Gadjah Mada Yogyakarta, Indonesia February 17-28, 2020.

**Member of the Scientific Committee and lecturer** for the *CIMPA research school on Elliptic curves: arithmetic and computation* Universidad de la República, Montevideo, Uruguay February 11 - 22, 2019.

**Member of the Scientific Committee and lecturer** for *Emil Artin International School in Mathematics for Students A Wams school on The mathematics of Artin's conjectures* Yerevan State University, Yerevan, Armenia May 21th- 25th, 2018.

**Member of the Scientific Committee and lecturer** for the *CIMPA research school on Explicit Number Theory*, The University of the Witwatersrand, Johannesburg, South Africa January 8th- 19th, 2018.

**Member of the Scientific Committee and lecturer** for the *joint CIMPA-ICTP research school on Artin L-functions, Artin's primitive roots conjecture and applications*, Nesin Mathematical village, Sirince, Turkey, May 29th- June 12, 2017.

**Member of the Scientific Committee and lecturer** for the *WAMS research school on Topics in algebraic number theory and Diophantine approximation*, Mathematics Department, College of Science, Salahaddin University- Erbil, Kurdistan Region/IRAQ, March 12th - 17th, 2017.

**Member of the Scientific Committee and lecturer** for the *joint CIMPA-ICTP research school on Lattices and applications to cryptography and coding theory*, Ho Chi Minh University of Pedagogy, Ho Chi Minh City, Vietnam, August 1st - 12th, 2016.

**Member of the Scientific Committee and lecturer** for the *joint CIMPA-ICTP-UNESCO-MESR-MINECO-PHILIPPINES research school on Algebraic Curve over Finite Fields*, University of the Philippines Dillman, Manila, July 22nd - August 2nd 2013.

**Member of the West Asian Mathematical schools committee 2018-2022**

## Selected Publications

**On the Arithmetic of Knuth's Powers and Some Computational Results About Their Density**, (with Fabio Caldarola, Gianfranco d'Atri, Pietro Mercuri) in *Numerical Computations: Theory and Algorithms Third International Conference, NUMTA 2019, Crotone, Italy, June 15-21, 2019, Revised Selected Papers, Part I* LNCS 11973, Springer, pp 381-388

**Symmetries for heights on split tori**, Journal de Théorie des Nombres de Bordeaux, **30**, no.1 (2018), pp. 41-57.

**Folding cubic roots: Margherita Piazzolla Beloch's contribution to elementary geometric constructions**, (with Paola Magrone) Proceedings of the 16th Conference on Applied Mathematics (APLIMAT 2017), Slovak University of Technology, Bratislava, Slovak Republic, January 31st - February 2nd, 2017, ISBN: 978-1-5108-3698-3.

**Canonical heights over global function fields** Riv. Mat. Univ. Parma (new series) Vol 7 (2016) pp. 247-258 (Proceeding of the Third Italian Number Theory Meeting).

**Prodromes of a theory of heights on non-commutative separable  $K$ -algebras**, "Proceedings of the Second Italian Conference in Number Theory, Parma (Italy) 13-15 November 2003" Riv. Mat. Univ. Parma: (7) 3\* (2004).

**The Canonical Height of a finite étale  $K$ -algebra**, "Number theory, Proceedings of the VII Meeting of the Canadian Number Theory Association, Montreal 2002", CRM Proceedings & Lectures notes vol 36, American Mathematical Society, 2004, pp 295-303.

**A Gelfand-Beurling formula for heights on endomorphisms rings**, Journal of Number Theory, n. 1, vol 83 (2000), pp. 91-105.

**A Note on Height Pairings on Polarized Abelian Varieties**, Atti dell'Accademia Nazionale dei Lincei, Rendiconti Lincei, Matematica e Applicazioni, 1999, serie IX - volume X - Fascicolo I, pp. 57-60.

**Height preserving linear transformations on semisimple  $K$ -algebras**, Proceedings of the XIX<sup>èmes</sup> Journées Arithmétiques, Collectanea Mathematica, Vol. XLVIII (1997), fasc. 1-2, pp 217-234.

### Editorial services

**Guest editor** (with Samuele Anni and Elisa Lorenzo Garcia) of AJAX, Arithmetic, Jacobians, Algorithms & Exposition, Celebrating the mathematics of René Schoof, to appear in The Polynesian Journal of Mathematics

**Editor** (with Marina Monsurrò, Francesco Pappalardi and Alessandro Zaccagnini) of the series *Proceedings of the mini symposium of the Roman Number Theory Association*, Università Roma Tre, (Volumes I-V) IF PRESS

**Guest editor** (with René Schoof) of the proceedings of the XXI<sup>èmes</sup> Journées Arithmétiques, Journal de Théorie des Nombres de Bordeaux, Vol. 13, Fasc. 1, 2001

### Selected talks

**On Symmetries of Height Functions Associated to a Class of Representations of  $G_m^d$** , Number Theory Down Under 2025, University of Canterbury, August 25-29, 2025 (contributed talk)

**Counting Rational Points: New Frontiers for Curves of Higher Genus**, R. P. Agarwal Memorial Lecture, International Conference on Special Functions & Applications (ICSFA-2024), XXIIIrd Annual Meeting of SSFA, Vivekanand Global University, Jaipur, Rajasthan India, 28 - 30 November, 2024. (Invited speaker)

**The spectral height and heights on split tori**, *The seventh number theory meeting*, Università degli Studi di Torino, September 28-29, 2023. (Invited speaker)

**Roots of polynomials: a few historical sketches**, plenary talk, *The third international Conference on Mathematics and application* Salahaddin University, Erbil, Kurdistan region/Iraq, August 29-31 2022. (Invited speaker)

**Roots of polynomials: a few historical sketches**, plenary talk, *The Twelfth International Conference on Mathematics and Mathematics Education in Developing Countries* The National University of Laos, Laos, November 1-3, 2019. (Invited speaker)

**Symmetries for heights on split tori**, *Class groups of number fields and related topics*, Harish-Chandra Research Institute, Allahabad, India, October 16-19, 2019. (Invited speaker)

**A Height pairing on split tori**, Baikal Number Theory, August 26-30, 2019 The island of Olkhon (Baikal lake), Russia.

**Large primes and where to find them**, plenary talk, *The Eleventh International Conference on Mathematics and Mathematics Education in Developing Countries* The National University of Laos, Laos, November 2-4, 2018. (Invited speaker)

**A height pairing on split tori**, *International Conference on Class Groups of Number Fields and Related Topics-2018*, Harish-Chandra Research Institute, Allahabad, India, 8-11 Ottobre 2018. (Invited speaker)

**Cube duplication via paper folding**, *The Tenth International Conference on Science and Mathematics Education in Developing Countries*, Mandalay University, Mandalay, The Republic of the Union of Myanmar, November 10-12, 2017. (Invited speaker)

**Folding cubic roots: Margherita Piazzolla Beloch's contribution to elementary geometric constructions**, 16th Conference on Applied Mathematics (APLIMAT 2017), Slovak University of Technology in Bratislava, Slovacchia, 31 Gennaio - 2 Febbraio 2017.

**On canonical heights on endomorphisms rings over global function field**, Terzo Incontro Italiano di Teoria dei Numeri, 21-24 Settembre 2015, Centro De Giorgi, Pisa.

**Symmetries for heights on split tori**, *XXIX<sup>èmes</sup> Journées Arithmétiques*, Debrecen, 6 -10 luglio 2015.

**Canonical heights on Endomorphism rings and étale algebras over global function fields**, *XXVIIth Journées Arithmétiques*, Vilnius, June 26 - July 1 2011.

**Prodromi di una teoria delle altezze su  $K$ -algebra separabili non commutative**, Secondo convegno Italiano di Teoria dei Numeri, Parma, November 13-15 2003.

**Heights on finite étale  $K$ -algebras**, comunicazione al Canadian Number Theory Association VII Meeting, Montreal, May 19-25 2002.

**Homogenous heights for linear transformations**, *XX<sup>èmes</sup> Journées Arithmétiques 97*, Limoges, September 16-20 1997.

**Height preserving linear transformations on semisimple  $K$ -algebras**, *XIX<sup>èmes</sup> Journées Arithmétiques*, Barcelona, July 16-20 1995.

#### Short courses in research schools

**Algebraic Number Theory**, *CIMPA research school on Arithmetic in action: Number Theory and its Applications to Cryptography and Coding Theory*, Gadjah Mada University, Yogyakarta, Indonesia, July 14 - 25, 2025

**Introduction to commutative algebra**, *AESIM school Introduction to algebraic number theory and algebraic curves*, Mathematical Institute SASA Faculty of Mathematics, University of Belgrade, September 9-20, 2024

**Introduction to elliptic curves**, *AESIM school on Algebra, Number theory and their applications to Cryptography* Salahaddin University, Erbil, Kurdistan Region, Iraq February 25 - March 7, 2024

**Further Topics in the theory of Elliptic Curves**, *CIMPA research school on Isogenies of elliptic curves and their applications to cryptography* Universidad del Cauca, July 24th - August 4th, 2023.

**Introduction to algebraic geometry**, *Wams school on Topics in commutative algebra* Sulamani University, Kurdistan region/Iraq September 3-7, 2022

**Introduction to height functions** *Wams school on Lattices, heights and Diophantine approximation* Urgench State University, Urgench, Uzbekistan June 6 - 10, 2022.

**Modular Forms** *CIMPA research school on Group Actions in Arithmetic and Geometry* Universitas Gadjah Mada Yogyakarta, Indonesia February 17-28, 2020

**Heights on elliptic curves**, *CIMPA research school on Elliptic Curves: Arithmetic and Computation* Universidad de la Repblica Montevideo, Repblica oriental del Uruguay February 11th-22nd 2019

**Introduction to Algebraic Number Theory**, *CIMPA research school on Explicit Number Theory*, The University of the Witwatersrand, Johannesburg, South Africa, 8 - 19 Gennaio 2018

**Groups and algebraic methods in number theory**, *Emil Artin International School in Mathematics for Students a Wams school on The mathematics of Artin's conjectures* Yerevan State University, Yerevan, Armenia May 21 th-25th, 2018

**Elliptic curves**, *joint CIMPA-ICTP research school on Artin L-functions, Artin's primitive roots conjecture and applications*, Nesin Mathematical village, Sirince, Turkey, May 29th- June 12, 2017

**Mahler measure of polynomials**, *WAMS school Topics in algebraic number theory and Diophantine approximation*, Mathematics Department, College of Science, Salahaddin University- Erbil, Kurdistan Region/IRAQ, March 12th - 17th, 2017.

**Lattices and modular forms**, *joint CIMPA-ICTP research school on Lattices and applications to cryptography and coding theory*, Ho Chi Minh University of Pedagogy, Ho Chi Minh City, Vietnam, August 1st - 12th, 2016

**Algebraic curves**, *joint CIMPA-ICTP-UNESCO-MESR-MINECO-PHILIPPINES research school on Algebraic Curve over Finite Fields*, University of the Philippines Dillman, Manila, July 22nd - August 2nd 2013

## Organization of conferences

**Member of the organizing committee** for the *Mini symposium of the Roman number theory association*, Roma Tre University, editions 1-9 (2015-)

**Member of the scientific committee** for *Rene25, celebrating the research interests of René Schoof*, University of French Polynesia, Tahiti, August 18-22, 2025.

**Member of the organizing committee** for *Harmonies in Moduli Spaces, in occasion of Lucia Caporaso's birthday*, Universit Roma Tre, June 9-13, 2025.

**Member of the scientific committee** for the *Fourth International Conference of Mathematics (SICME2019)*, College of Science, Salahaddin University, Erbil, Kurdistan-Iraq, March 22-23, 2025.

**Member of the scientific committee** for *Rowing Through Numbers celebrating Francesco Pappalardi's 60th birthday* Sahaladdin University, Erbil, Kurdistan region, Iraq, May 18-21, 2025.

**Member of the organizing committee** for *Algebraic geometry in Roma Tre, on the occasion of Sandro Verra's 70th birthday*, Università Roma Tre, Roma. June 14-17, 2022.

**Member of the organizing committee** for *La grandezza dei punti piccoli Celebrating Francesco Amoroso's 60th birthday* , Università di Pisa, May 23-25, 2022.

**Member of the organizing committee** for *Leuca2022 Celebrating Claude Levesque's, Damien Roy's and Michel Waldschmidt's birthdays* , Marina di San Gregorio, Patù (Lecce), Italy, May 16-21, 2022.

**Member of the scientific committee** for the *Third International Conference of Mathematics (SICME2019)*, College of Science, Salahaddin University, Erbil, Kurdistan-Iraq, March 27-29, 2022.

**Member of the scientific committee** for the *Second International confernece of Mathematics*, College of Science, Salahaddin University- Erbil, Kurdistan Region/IRAQ, 2-5 February 2019

**Member of the local organizing committee** for *Numeration 2017*, Università Roma Tre, June 5th-9th, 2017.

**Member of the local organizing committee** for *Leuca2016, Celebrating Michel Waldschmidt's 70th birthday* June 13-17 2016, Marina di San Gregorio, Pat (Lecce),

**Member of the local organizing committee** for the *"Meeting on Algebric Varieties"*, Roma Tre University, 18-20 Dicembre 2003.

## Professional associations

Honorary member of the Society for Special Functions & their Applications

Member of the Centre International of Mathématiques Pures and Appliquées

President of the Roman Number Theory Association

Member of the American Mathematical Society

Member of the European Mathematical Society

Member of the Unione Matematica Italiana