

# Amos Turchet

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## EMPLOYMENT

- 2020 – Ricercatore a tempo determinato tipo B (tenure track), Università di Roma Tre
- 2019 – 2020 Junior Visitor, Scuola Normale Superiore di Pisa
- 2016 – 2019 Acting Assistant Professor, University of Washington (USA)
- 2014 – 2016 Postdoctoral Researcher, Chalmers University of Technology (Sweden)

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## VISITING APPOINTMENTS

- 2013 Academic guest, Rational Points, Rational Curves and Entire Holomorphic Curves on Algebraic Varieties, Centre de recherches mathématiques, Montréal
- 2012 – 2013 Visiting Researcher, Brown University,  
Advisors: Prof.s Dan Abramovich and Joseph Silverman

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## EDUCATION

- 2014 Ph.D. Mathematics, Università degli studi di Udine (advisor: Pietro Corvaja)
- 2010 M.S. Mathematics, Università degli studi di Udine, cum laude
- 2007 B.S. Mathematics, Università degli studi di Udine, cum laude
- 2007 Classical Guitar Diploma, Conservatorio A. Boito di Parma, 10/10

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## RESEARCH INTERESTS

Arithmetic and Algebraic Geometry, Number Theory

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## AWARDS AND GRANTS

- 2023 Habilitation for Associate Professor in Algebra and Geometry (01/A2)
- 2019 Qualification for Maître de conférences
- 2018 Nominee, University of Washington Postdoc Mentoring Award
- 2017 Grant for “Where Geometry meets Number Theory, a conference for 60th birthday of P. Salberger” : 110.000 SEK (GoCAS) and 93.000 SEK (Swedish Research Council)
- 2016 Grant for “Number Theory Days 5” : 25.000 SEK (GoCAS)
- 2015 Grant for “Number Theory Days 3” : 35.000 SEK (GoCAS)
- 2014 Knut and Alice Wallenberg Foundation Travel grant
- 2011 – 2014 MIUR Ph.D. Scholarship

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## PUBLICATIONS

### IN JOURNALS AND VOLUMES

1. Divisibility of polynomials and degeneracy of integral points. (with E. Rousseau and J.T.-Y. Wang). – *Mathematische Annalen* (2023). doi: /10.1007/s00208-023-02564-3
2. Around the Chevalley-Weil theorem. (with P. Corvaja and U. Zannier) – *L'Enseignement Mathématique* **68** (2022), no. 1-2, 217–235. doi: 10.4171/lem/1027
3. Lang-Vojta Conjecture over function fields for surfaces dominating  $\mathbb{G}_m^2$ . (with L. Capuano.) – *European Journal of Mathematics* **8** (2022) no. 2, 573–610. doi: 10.1007/s40879-021-00502-8
4. Nonspecial varieties and Generalized Lang-Vojta conjectures. (with E. Rousseau and J.T.-Y. Wang) – *Forum Math. Sigma* **9** (2021), Paper No. e11, 29 pp. doi: 10.1017/fms.2021.8
5. Hyperbolicity And Uniformity Of Varieties Of Log General Type. (with K. Ascher and K. DeVleming.) – *International Mathematics Research Notices* **2022**, Issue 4, February 2022, 2532–2581. doi: 10.1093/imrn/rnaa186
6. The Erdős–Ulam problem, Lang’s Conjecture, and uniformity. (with K. Ascher and L. Braune) – *Bulletin of the London Mathematical Society* **52** (2020), no. 6, 1053–1063. doi: 10.1112/blms.12381
7. Fibered Threefolds and Lang-Vojta’s Conjecture over Function Fields. *Transactions of the American Mathematical Society* **369** (2017), no.12, 8537–8558 doi: 10.1090/tran/6968
8. A fibered power theorem for pairs of log general type. (with K. Ascher.) *Algebra and Number Theory* **10** (2016), no. 7, 1581–1600. doi: 10.2140/ant.2016.10.1581
9. Invitation to Integral and Rational points on curves and surfaces. (with P. Das.) *Rational Points, Rational Curves, and Entire Holomorphic Curves on Projective Varieties*, Contemporary Mathematics, vol. 654, Amer. Math. Soc., Providence, RI, 2015, pp. 53–73. doi: 10.1090/conm/654/13215

### SUBMITTED FOR PUBLICATION

10. Some examples of exceptional loci in Vojta Conjecture.
11. Greatest Common Divisor Results On Semiabelian Varieties And A Conjecture Of Silverman. (with F. Barroero and L. Capuano)

**OTHER PUBLICATIONS**

12. Hyperbolicity of varieties of log general type.  
chapter in *Arithmetic Geometry of Logarithmic Pairs and Hyperbolicity of Moduli Spaces*, Nicole, Marc-Hubert (Ed.), CRM Short Courses - Springer International Publishing. doi: 10.1007/978-3-030-49864-1.
13. Geometric Lang-Vojta Conjecture in the projective plane. Ph.D. Thesis, 2014.

**LECTURE SERIES**

- 2021 10th swiss-french workshop in Algebraic Geometry, Charmey, September 2021  
Title: *Diophantine geometry and hyperbolicity properties of algebraic varieties*
- 2019 School (and Workshop) on Diophantine geometry and special varieties  
Trento, September 2019, Supporting lecturer
- 2018 Geometry and arithmetic of orbifolds, Montréal December 2018  
Title: *Arithmetic and Geometry of log pairs* (w. Kenny Ascher)

**SEMINARS AND CONFERENCES AS SPEAKER**

- 2022 Université de Bretagne Occidentale, Séminaire Géométrie et Topologie, Brest, France  
Geometry and Arithmetic of Moduli Spaces, Pisa, Italy  
Geometric and Arithmetic Frontiers of Orbifolds, Montreal, Canada  
Foliations and Algebraic Geometry, Quimper, France
- 2021 Università di Bologna, Seminario di Algebra e Geometria  
Università La Sapienza, Seminario di Algebra e Geometria  
Università Tor Vergata, Geometry Seminar Tor Vergata  
Minisymposium "Number Theory" within the 8ECM (Online)  
Number Theory Online 2021 (Online)
- 2020 Università di Roma Tre, Geometry Seminar
- 2019 University of Freiburg, Seminar: Algebra, Zahlentheorie und algebraische Geometrie  
Topics On Nevanlinna Theory And Complex Hyperbolicities, Shanghai Center for  
Mathematical Sciences  
Université Paris-Sud, Audition pour MDC  
Diophantine Approximation and Value Distribution Theory at the interface of Arithmetic and Complex Hyperbolic Geometry. UQAM, Montréal  
Hawaii Number Theory 2019 conference (HINT 2019)  
Arithmetic Geometry Session  
Greater Vancouver Number Theory Day, UBC, Vancouver
- 2018 Canadian Math Society Winter Meeting, Vancouver  
Recent Advances in Arithmetic and Hyperbolic Geometry  
University of Oxford, Arithmetic Geometry Seminar

- Spring Eastern Sectional AMS Meeting, Portland University  
 Special Session on Algebraic Geometry and its Connections  
 University of Oxford, Algebraic Geometry Seminar
- 2017 Banff International Research Station, Diophantine Approximation and Algebraic Curves  
 UBC, Algebraic Geometry Seminar
- 2016 University of Oregon, Number Theory Seminar  
 University of Washington, Number Theory Seminar  
 University of Washington, Algebra and Algebraic Geometry Seminar  
 KTH, Seminar Algebra and Geometry  
 Aix Marseille Université, Séminaire Géométrie, Dynamique et Topologie  
 Universität Bayreuth, Algebraic Geometry Seminar  
 Johannes Gutenberg University Mainz, SFB-Kolloquium
- 2015 Terzo Incontro Italiano di Teoria dei Numeri, Centro de Giorgi Pisa  
 Quantitative arithmetic geometry, Mittag-Leffler Institute  
 $\mathbb{N}^3$ -days 2, University of Copenhagen  
 Chalmers University of Technology, Algebraic Geometry Seminar
- 2014 Universität Basel, Seminar Algebra and Geometry  
 Banff International Research Station, Vojta's Conjectures  
 Chalmers University of Technology, Number Theory Seminar  
 Intercity workshop in Arakelov Theory, "Sapienza" Università di Roma  
 On Lang and Vojta's conjectures, CIRM Marseille
- 2013 TULSF VIII (A meeting in Algebraic Geometry), Ljubljana University  
 Brown University, Junior Arithmetic and Algebraic Geometry Seminars
- 2012 Moduli of Curves and Gromov-Witten Theory, Institut Fourier

## SELECTED CONFERENCES AS A PARTICIPANT

- 2022 Foliations in Algebraic and Birational Geometry, EPFL Lausanne  
 Banff International Research Station, Specialisation and Effectiveness in Number Th.
- 2021 Banff International Research Station, Geometry via Arithmetic
- 2019 Topics in Rational and Integral Points, Universität Basel  
 Birational Geometry and Hodge Theory – Entire Curves, Rational Curves and Foliation,  
 CIRM Marseille
- 2018 International summer school on Arithmetic geometry, Università degli Studi di Salerno  
 Workshop on effectivity and ineffectivity for unlikely intersections, University of Manchester
- 2017 Western Algebraic Geometry Symposium, Fall 2017, UCLA  
 Specialization problems in Diophantine Geometry, Cetraro  
 Western Algebraic Geometry Symposium, Spring 2017, UBC

- Banff International Research Station, Newton-Okunkov Bodies, Test Configurations,  
and Diophantine Geometry
- 2016  $\mathbb{N}^3$ -days 4, University of Copenhagen
- 2015 Banff International Research Station, Distribution of Rational and Holomorphic Curves  
in Algebraic Varieties
- 2015 Summer Research Institute on Algebraic Geometry, University of Utah
- Final ERC meeting in Diophantine Geometry, Accademia dei Lincei
- 2014  $\mathbb{N}^3$ -days 1, University of Copenhagen
- Second ERC Research Period on Diophantine Geometry, Cetraro
- Géométrie Algébrique en Liberté, SISSA
- 2011 School and Conference on Modular Forms and Mock Modular Forms and their appli-  
cations in Arithmetic, Geometry and Physics, ICTP

## TEACHING

### UNIVERSITY ROMA TRE, Professor

- 2021 Fall CR510: Elliptic Cryptography
- 2021 Spring GE220: Topology
- 2020 Spring GE450: Algebraic Topology

### UNIVERSITY OF WASHINGTON, Professor

- 2019 Spring Math 308 H: Matrix Algebra (Linear Algebra)
- Winter Math 340 G: Abstract Linear Algebra
- 2018 Fall Math 308 C: Matrix Algebra (Linear Algebra)
- Math 308 D: Matrix Algebra (Linear Algebra)
- Spring Math 308 B: Matrix Algebra (Linear Algebra)
- Winter Math 582 G: Diophantine Geometry of Curves (Graduate Course)
- Math 308 D: Matrix Algebra (Linear Algebra)
- 2017 Fall Math 402: Introduction to Modern Algebra I (Group Theory)
- Spring Math 308 G: Matrix Algebra (Linear Algebra)
- Winter Math 308 A: Matrix Algebra (Linear Algebra)
- Math 308 D: Matrix Algebra (Linear Algebra)
- 2016 Fall Math 308 G: Matrix Algebra (Linear Algebra)

### UNIVERSITY OF WASHINGTON, Reading courses

- 2018 Arithmetic of Elliptic Curves (1 graduate student)
- Uniformity of Rational points (4 undergraduate students)
- 2017 Diophantine Equations (4 undergraduate students)
- Primality Tests and Elliptic Curves (4 undergraduate students)
- Primality Tests and the AKS Theorem (4 undergraduate students)

**CHALMERS UNIVERSITY OF TECHNOLOGY**, Professor

2015 Scheme Theory (Graduate Course)

**CHALMERS UNIVERSITY OF TECHNOLOGY**, Teaching assistant

2015 MVE085: Multivariable Calculus

MVE016: Calculus II

2014 MVE085: Multivariable Calculus

**UNIVERSITÀ DEGLI STUDI DI UDINE**, Teaching assistant

2013 – 2014 Matematica Discreta per Informatica (Combinatorics, arithmetic and linear algebra)

2012 – 2013 Matematica Discreta per Informatica

2011 – 2012 Matematica Discreta per Informatica

Matematica per Architettura (Multivariable calculus and linear algebra)

2010 – 2011 Matematica per Architettura

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**CONFERENCE ORGANIZATION****ORGANIZER**

2022 Winter Meeting in Algebra and Geometry

Co-organizers: B. Bolognese, D. Fiorenza, M. Lanini

Leuca2022, Celebrating Claude Levesque's, Damien Roy's and Michel Waldschmidt's birthdays

Co-organizers: F. Barroero, D. Cafiero, L. Capuano, A. Mori, F. Pappalardi, V. Talamanca

Algebraic Geometry in Roma Tre, On the occasion of Sandro Verra's 70th birthday

Co-organizers: A. Bruno, L. Caporaso, M. Lelli-Chiesa, A. F. Lopez, M. Melo, F. Merola, M. Pontecorvo, E. Sernesi, P. Supino, V. Talamanca, F. Viviani.

2021 Algebraic geometry conference - Christmas in Rome 2021

Co-organizers: B. Bolognese, E. Fatighenti, R. Fringuelli

2019 AMS Joint Central and Western Sectional Meeting:

Special session on "Arithmetic Geometry and its connections"

Co-organizer: L. Capuano

2017 Where Geometry meets Number Theory, a conference for 60th birthday of P. Salberger

Co-organizer: J. Brandes, T. Browning, O. Marmon

2016  $\mathbb{N}^3$ -days 5 at Chalmers University

Co-organizers: J. Brandes, D. Eriksson, P. Salberger, M. Westerholt-Raum

2015  $\mathbb{N}^3$ -days 3 at Chalmers University

Co-organizer: D. Eriksson, P. Salberger, M. Westerholt-Raum

2011 9th Metaheuristics International Conference (Local Organizer)

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## ADVISING

### THESIS SUPERVISED

- 2016 Stepan Maximov, Trang Nguyen, Robin Sorsa Sigurdson, Olivia Stalin  
Chalmers University of Technology - Undergraduate thesis:  
“Primality Tests and the AKS primality test”

### RESEARCH PROJECTS FOR UNDERGRADUATES

- 2018 Washington Experimental Mathematical Lab: Uniformity of Diophantine Equations  
2017 Washington Experimental Mathematical Lab: Elliptic Curves and Primality Tests  
Washington Experimental Mathematical Lab: The AKS Primality Test

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## OUTREACH

- 2022 Lecturer, Professione ricercatore - Roma Tre University  
2018 Lecturer, Math Day - University of Washington  
2017 Lecturer, Math Day - University of Washington

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## SERVICE

### DEPARTMENTAL SERVICE

- 2021 – pres. Roma Tre University: Organizer of the Geometry Seminar  
Roma Tre University: Library representative for the Mathematics Section  
2018 Leading Acting Assistant Professor (guidance for new postdocs)  
2014 – 2016 Chalmers University of Technology: Organizer of the Algebraic Geometry and Number Theory Seminar

### COMMUNITY SERVICE

Referee for Annales Scientifiques de l'ENS, Annali SNS, Compositio, Forum of Mathematics Sigma, IMRN, International Journal of Number Theory, Journal de Théorie des Nombres de Bordeaux, Journal of Pure and Applied Algebra, Mathematica Scandinava, Periodica Mathematica Hungarica, Transactions of the AMS  
Reviewer for MathSciNet, Zentralblatt MATH  
Member of the Unione Matematica Italiana