Daniele Turchetti

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Research Interests

Algebraic geometry, number theory, analytic geometry
Berkovich spaces, arithmetic curves, tropical geometry, moduli spaces and modular forms, ramification theory of Galois covers, combinatorial algebra, and group representations.

Education

10/2011 - 11/2014	**PhD in Mathematics**, *Université de Versailles Saint-Quentin-en-Yvelines*
Thesis title	Contributions to arithmetic geometry in mixed characteristic.
09/2010 - 07/2011	**MSc in Algebra and Arithmetics**, *Université de Paris 11* (Orsay)
10/2005 - 08/2010	**BSc, MA in Mathematics**, *Università di Padova*

Professional experience

09/2021 - 12/2021	Part-time instructor, *NYU - London*
08/2021 - present	Research fellow, *University of Warwick*
08/2018 - 12/2020	AARMS post-doctoral fellow, *Dalhousie University*
08/2018 - 12/2020	Outreach coordinator, *Atlantic Association for Research in the Mathematical Sciences* (AARMS)
09/2016 - 07/2018	Post-doctoral fellow, *Université de Caen - Normandie*
09/2015 - 08/2016	Post-doctoral fellow, *Max Planck Institute for Mathematics - Bonn*
02/2015 - 08/2015	Post-doctoral fellow, *University of Leiden*
10/2011 - 09/2014	Instructor and Teaching Assistant, *Université de Versailles*

Selected grants and awards

04/2019	"Research in Paris" allowance from *Institut Henri Poincaré* (2,500 EUR)
01/2019	NSERC PromoScience grant (90,000$ for outreach with AARMS)
05/2018	Recipient of the *Fondation des Treilles Young Researcher Prize* (6,500 EUR)

| 11/2017 | Conference organization grants by *Foundation Compositio Mathematica*; *Journal de Théorie des Nombres de Bordeaux*; ANR *GLOBES*; GDR *GAGC* (5,000 EUR) |

Publications

[1] (with J. Poineau) Berkovich curves and Schottky uniformization I: the Berkovich affine line. To appear in "Arithmetic and geometry over local fields", *Lecture Notes in Mathematics*, Springer (2021).

[2] (with J. Poineau) Berkovich curves and Schottky uniformization II: analytic uniformization of Mumford curves. To appear in "Arithmetic and geometry over local fields, *Lecture Notes in Mathematics*, Springer (2021).

[3] (with L. Fantini) Triangulations of non-archimedean curves, semi-stable reduction, and ramification. To appear in *Annales de l'Institut Fourier* (2021).

[4] (with L. Fantini) Galois descent of semi-affinoid spaces. *Mathematische Zeitschrift* (2018), vol. 290: 1085-1114.

[5] (with G. Chinello) Weil representation and metaplectic groups over an integral domain. *Communications in Algebra* 43 (2015), no. 6: 2388-2419.

Preprints[1]

[Pp1] Equidistant liftings of Galois covers of elementary abelian groups (2020).

[Pp2] (with J. Poineau) Schottky spaces and universal Mumford curves over $\mathbb{Z}$ (2020).

[Pp3] Hurwitz graphs and Berkovich curves (2019).

Outreach texts

[i] Dans les coulisses du *MoMath*. *Images des Mathématiques*, CNRS, 2019.

[ii] Buissons et balais: la forme des espaces analytiques non-Archimédiens. *Images des Mathématiques*, CNRS, 2013.

Teaching

2021-22 (NYU - London)

· **Instructor for *Calculus I*.**

· **Instructor for *Algebra and Calculus I*.**

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[1] All the preprints are available online at www.mathstat.dal.ca/~dturchetti/.

2021 (Durham University)

- · **Tutorials for *Analysis I***. Topics include: sequences, series, power series, differentiability and integration.

- · **Tutorials for *Statistics I***. Topics include: Bayesian inference, probability distributions, confidence intervals, and hypothesis testing.

2018-19, 2019-20 (Dalhousie University)

- · **Instructor for *Matrix Theory and Linear Algebra II***, for second year students in the Faculty of Science. Topics included: abstract vector spaces, inner product and Hermitian spaces, and applications such as Fourier series, least squares approximation, and linear codes.

- · **Online content developer**. In 2020 the *Matrix Theory and Linear Algebra* course was offered online and I have developed remotely accessible resources and content that will be used by future teachers.

2016-17 (Université de Caen)

- · **Teaching Assistant for *Mathématiques***, mathematics course for first year students in Economics, Administration and Social Science. Topics include polynomial equations, linear algebra and graph theory with a focus on applications to economics.

2014-15 (Leiden University College)

- · **Instructor for *Statistics***, statistics course for first year students majoring in Economics and Political Science. I was responsible both for teaching and running lab sessions, teaching the students to use the program *R*.

2011-12, 2012-13, and 2013-14 (Université de Versailles)

For each of the three years of my Ph.D. program I have served as:

- · **Teaching Assistant for *Mathématiques Générales 3***, course in calculus (including linear and ordinary differential equations) and linear algebra for second year math students.

- · **Instructor for *Cours préparatoire au concours ENSI***, to prepare students for the competitive selection process to get admission to the French *Ecoles d'Ingegneurs*.

Public Outreach Involvement

07/2022	Co-organizer of the *BRIDGES Math and Art in Halifax* conference
2019 - 2020	Online and in-person contributor for *NS MathCircles* workshops
10/2018 - 12/2019	Co-host of *Math challenge club* at Dalhousie University

11/2019	Co-organizer of *Discovery days: Rubik's cube and other puzzles* at the Discovery Centre, Halifax, NS
06/2019	Co-organizer of the *Discovery days: Tau Day* math festival at the Discovery Centre, Halifax, NS
05/2019	Outreach invited speaker at the *Algant Alumni Network Symposium 2019*
05/2019	Co-organizer of *All SySTEMs go! 2019*, Halifax, NS
2013 - 2019	Contributor and referee for the CNRS sponsored website *Images des maths*
2017 - 2018	Associated member of the equipe *Diffusion de la culture mathématique* at the University of Caen
11/2017	Curator of the exhibition *IMAGINARY - Open Mathematics* in Caen
2013 - 2016	Workshop presenter for the *Fête de la Science* at Sorbonne Université & University of Caen
06/2013	Workshop presenter for the scientific festival of the association *Paris Montagne* at the *Ecole Normale Supérieure de Paris*

Service activities

2017 - Ongoing	Referee for peer-reviewed international mathematical journals
01/2020	Co-organizer of *Combinatorial Algebra meets Algebraic Combinatorics 2020* (international research conference), Dalhousie University
10/2019	Assistant organizer of *Science Atlantic - Mathematics, Statistics and Computer Science 2019* (research undergraduate event), Dalhousie University
11/2017	Co-organizer of the conference *Algebraic Geometry with "Fancy" Coefficients*, Université de Caen (international research conference)
2012 - 2014	Graduate student representative at the graduate school *Sciences et Technologies de Versailles*
2012 - 2014	Organizer of the *Young Researchers Seminar* at Versailles
2012 - 2014	Co-organizer of the workshop *Les Incontournables*, on the fundamental papers of algebraic geometry, Institut de Mathématiques de Jussieu

Selected Talks

Invited research talks

09/2021	Conference *Non-Archimedean and tropical geometry*, Frankfurt
03/2021	*Séminaire de théorie des nombres de l'IMJ-PRG*, Paris
01/2021	*Arithmetic Study Group*, Durham University

07/2020	*(Quarantined) Number Theory and Algebraic Geometry Seminar*, Simon Fraser University
05/2019	Conference *ALGANT Alumni Network Symposium*, Benasque
04/2019	*Seminario di Geometria Algebrica e Teoria dei Numeri*, Universitá di Padova
03/2019	*Quebec-Vermont Number Theory seminar*, McGill University, Montréal
12/2018	*Abstract Algebra guest lecture*, Yeshiva University, New York
06/2018	*Séminaire de Théorie des Nombres*, Université de Bordeaux
03/2018	*Séminaire de Géométrie Algébrique*, Université de Montpellier
03/2018	*Séminaire d'Arithmétique et Géométrie Algébrique*, Université de Strasbourg
02/2018	*Galois seminar*, University of Pennsylvania, Philadelphia
01/2018	*Séminaire d'Arithmétique*, Université de Rennes 1
07/2017	Conference *Berkovich spaces, Tropical Geometry and Model Theory*, Bogotà
06/2017	*Journée de la Federation Normandie Mathématiques*, Rouen
05/2017	*MAGIC Seminar*, Imperial College, London
	Symmetrie, Geometrie und Arithmetik seminar, Universität Heidelberg
03/2016	*Séminaire géométrie et singularités*, Université de Rennes 1 *Ergodic Theory seminar*, Ecole Polytechnique *Séminaire de théorie des nombres*, Université de Bordeaux 1
06/2015	*Séminaire de Théorie des Nombres*, Université de Montpellier
05/2015	*Séminaire de Théorie des Nombres*, Université de Limoges
11/2014	*Galois seminar*, University of Pennsylvania, Philadelphia
05/2014	*Algebra und Geometrie Oberseminar*, Goethe University, Frankfurt
04/2014	*Séminaire de géométrie tropicale*, Institut de Mathématiques de Jussieu
03/2014	*Collaborative Number Theory Seminar*, CUNY, New York
02/2014	*Algebraic geometry seminar*, NYU, New York

Contributed conference talks

06/2020	*Algebraic and Tropical Online Meetings*
01/2019	*Combinatorial Algebra meets Algebraic Combinatorics 2019*, University of Ottawa
06/2018	*Géométrie Algébrique en Liberté XXVI*, Strasbourg
09/2017	*Jeunes en Arithmetique et Variétés Algébriques*, Tatihou
07/2017	*Journées arithmétiques XXX*, Caen
01/2015	*MAA-AMS Joint Mathematical Meeting*, San Antonio
06/2014	*Géométrie Algébrique en Liberté XXII*, SISSA, Trieste
07/2013	*Journées arithmétiques XXVIII*, Grenoble