

Tiago J. Fonseca

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Personal details

Full name *Tiago Jardim da Fonseca*
Born in *Batatais, State of São Paulo, Brazil*
Nationality *Brazilian*
Date of birth *March 14th, 1990*
Languages *Portuguese (native), English (fluent), French (fluent)*

Professional activity

2018-present **Postdoctoral Research Associate**, *University of Oxford*, Oxford, United Kingdom.
Part of the ERC project "Galois Theory of Periods" under the direction of Francis Brown.
2019-2020 **Stipendiary Lecturer**, *Hertford College*, Oxford, United Kingdom.
Temporary teaching position.
01-09/2018 **Postdoctoral researcher**, *Max-Planck-Institut für Mathematik (MPIM)*, Bonn, Germany.
09-12/2017 **ATER**, *Université Paris-Saclay*, Orsay, France.
(An ATER is a form of temporary research contract with teaching load)

Education

2014-2017 **Ph.D. Mathematics**, *Université Paris-Saclay*, Orsay, France.
Thesis: *Integral curves: transcendence and geometry*. Supervisor: *Jean-Benoît Bost*.
2012-2014 **M.S. Mathematics**, *Université Paris-Saclay*, Orsay, France.
Memoir: *Integrality in Mirror Symmetry*. Supervisor: *Jean-Benoît Bost*.
2008-2011 **B.S. Mathematics**, *Universidade de São Paulo*, São Carlos, Brazil.

Publications and preprints

- 2020 **Towards algebraic iterated integrals for elliptic curves via the universal vectorial extension**, with Nils Matthes. *RIMS Kokyuroku*, No. 2160 (2020), 114-125.
eprint [arXiv:2009.10433](https://arxiv.org/abs/2009.10433)
- 2019 **On coefficients of Poincaré series and single-valued periods of modular forms**, *Res Math Sci* 7, 33. <https://doi.org/10.1007/s40687-020-00232-5>.
eprint [arXiv:1912.02277](https://arxiv.org/abs/1912.02277)
- 2019 **A geometric introduction to transcendence questions on values of modular forms**, *Appendix to the monograph Modular and automorphic forms & beyond by H. Movasati*.
eprint [arXiv:2011.14401](https://arxiv.org/abs/2011.14401)
- 2018 **Higher Ramanujan equations and periods of abelian varieties**, *Memoirs of the AMS*, *accepted*.
eprint [arXiv:1807.11044](https://arxiv.org/abs/1807.11044)

2018 **Algebraic independence for values of integral curves**, *Algebra & Number Theory* 13-3 (2019), 643–694. DOI 10.2140/ant.2019.13.643.
eprint [arXiv:1710.00563](https://arxiv.org/abs/1710.00563)

Invited talks (selection)

Coming up

Apr 2021 International Seminar on Automorphic Forms - TU Darmstadt, Germany

Past talks

Jan 2021 Geometric, Arithmetic and Differential equations of Periods seminar - IMPA, Brazil [video](#)

Sep 2020 LMS Lecture series 'A crash course in modular forms and cohomology' - UK [website](#)

May 2020 Brazilian Algebraic Geometry Seminar - IMPA, Brazil [video](#)

May 2020 Research School "Geometry and Dynamics of Foliations" - CIRM, France [video](#)

Mar 2020 London Number Theory seminar - London, UK

Jan 2020 Geometry and Number Theory seminar - Nottingham, UK

Dec 2019 Number Theory Seminar - Basel, Switzerland

Nov 2019 Young Researchers in Algebraic Number Theory - Warwick, UK

Oct 2019 Galois Theory of Periods seminar - Oxford, UK

May 2019 Young Mathematicians Academic Forum at USTC - Hefei, China

Mar 2019 Number Theory Seminar - Oxford, UK

Oct 2018 Galois Theory of Periods seminar - Oxford, UK

Jul 2018 Workshop "Transcendence and foliations" - Tatihou, France

Apr 2018 Oberseminar at MPIM - Bonn, Germany

Dec 2017 Number Theory Seminar at KU - Copenhagen, Denmark

Aug 2017 Summer School "Motives for Periods" at FU - Berlin, Germany

Jul 2017 Workshop "Classification of foliations in codim 1" - Porquerolles, France

May 2017 Number Theory Seminar at ETH - Zürich, Switzerland

May 2017 Réseau d'étudiants en géométrie algébrique at IHP - Paris, France

Aug 2015 Seminário Genet-Roussel at ICMC - São Carlos, Brazil

Teaching

University of Oxford

2020-2021 ○ Tutorial - Galois Theory - Part B (Undergrad)

2019-2020 Stipendiary Lecturer at Hertford College - Oxford

○ Tutorial - Analysis I - Prelims (Undergrad)

○ Tutorial - Linear Algebra I - Prelims (Undergrad)

○ Tutorial - Topology - Part A (Undergrad)

○ Tutorial - Rings and modules - Part A (Undergrad)

○ Tutorial - Number Theory (Undergrad)

○ Tutorial - Projective Geometry (Undergrad)

- 2018-2019
 - Tutorial - Category Theory - Part C (Master)
 - Tutorial - Elliptic Curves - Part C (Master)
 - TCC Course - Calculus on Schemes (PhD). 16 hours course, part of the TCC program, a collaboration between the mathematics departments at the Universities of Bath, Bristol, Imperial, Oxford and Warwick. Details: <http://people.maths.ox.ac.uk/jardindafons/tcc.html>.

Université Paris-Saclay

- 2017-2018
 - TA - Mathématiques de la modélisation I - L1 BCST S1 (Undergrad)
 - TA - Mathématiques de la modélisation II - L2 BCST S3 (Undergrad)
- 2016-2017
 - TA - Probabilités et Statistiques - DUT S3 (Undergrad), 2 groups
- 2015-2016
 - TA - Probabilités et Statistiques - DUT S3 (Undergrad), 2 groups
- 2014-2015
 - TA - Graphes et Automates - DUT S2 (Undergrad)
 - TA - Analyse et méthodes numériques - DUT S2 (Undergrad)

Student supervision

- 2019-2020
 - Yiming Tang - *The AGM: from elliptic integrals to point counting*. Summer Research Programme.
- 2018-2019
 - Alex Saad - *Picard-Fuchs equations and \mathbb{F}_p -points on elliptic curves*. Graduate student project.
 - Arkadij Bojko - *Grothendieck's comparison theorem*. Graduate student project.
 - Deepak Kamlesh - *Picard-Fuchs equations for families of elliptic curves*. Graduate student project.
 - Matija Tapuskovic - *Yukawa coupling via Hodge Theory*. Graduate student project.
 - Zhenhua Wu - *Cartier operator*. Graduate student project.

Other information

Organisation

- Creation and organisation of the PhD students seminars on Algebraic Geometry and Number Theory "Séminaires Secrets d'Orsay". Orsay. [<http://ssorsay.blogspot.com/>] (2014-2017)
- Co-organiser of the WORKing seminar on Diophantine Geometry. Warwick, Oxford, Reading, and King's College. [<https://sites.google.com/site/netandogra/working-seminar>] (2019-2020)

Scholarships/Grants

- FAPESP scholarship during the B.S.
- FMJH scholarship during the M.S. and Ph.D.

Prizes

- Prize of Academic Excellence in B.S. Mathematics, ICMC-USP São Carlos (2011).
- Honorable Mention in the Brazilian Mathematical Olympiad (2011).

Outreach

- Monitor at *Math.En.Jeans Association* in Blaise Pascal High School, Orsay (2014-2017).