

University of Exeter, Department of Mathematics  
North Park Road, Exeter, EX4 4QE  
United Kingdom  
☎ +44 (0)1392 723114  
✉ [j.c.andrade@exeter.ac.uk](mailto:j.c.andrade@exeter.ac.uk)  
🌐 <http://julioandrade.weebly.com/>

# Julio Andrade

## Present Appointment

2017– **Senior Lecturer**, *University of Exeter*, UK.

## Previous Appointments

2016–2017 **Lecturer**, *University of Exeter*, UK.

2014–2016 **Senior Researcher in Number Theory**, *University of Oxford*.  
RA on EPSRC grant number EP/J009458/1

2013–2014 **William Hodge Fellow**, *Institut des Hautes Études Scientifiques (IHÉS)*, France.

2013 **Research Associate**, *Williams College*, USA, UK.

2012–2013 **Postdoctoral Institute Fellow**, *Brown University - ICERM*, USA.

## Academic Qualifications

2012 **Ph.D.**, *University of Bristol*, UK.

"Random Matrix Theory and  $L$ -functions in Function Fields", supervised by Prof. Jon Keating

2007 **B.A. Mathematics (Licenciatura)**, *São Paulo State University (UNESP)*, Brazil.

"An Introduction to the Riemann Zeta-Function", supervised by Prof. Stavros Christodoulou

## Special Awards, Honours and Distinctions

2019 **EPSRC Recognition as Peer Review College Member**.

2018 **Nominated for the CEMPS Academic Award**, category "Research Excellence Award", University of Exeter.

2018 **Above and Beyond Silver Award**, University of Exeter, £2,000.

2018 **Nominated for Teaching Award**, category "Best Lecturer", University of Exeter.

2017 **Leverhulme Trust Research Project Grant**, ≈£280,000.

2017 **London Mathematical Society and the Clay Mathematics Institute, Research School Grant**, £31,000.

2017 **London Mathematical Society Regional Meeting Award**, joint with Prof. Nigel Byott, £5,000.

2017 **London Mathematical Society Research in Pairs Award**, £1,200.

2016 **Heilbronn Institute 10th Anniversary Grant**, £11,500.

2016 **Above and Beyond Bronze Award**, University of Exeter, £500.

- 2015 **Royal Commission for the Exhibition of 1851**, *1851 Research Fellowship in Science*.  
2008 **University of Bristol Overseas Research Studentship**.  
2008 **University of Bristol Postgraduate Scholarship Award**.

## Research

Publications: [refereed journal articles](#)

- [1] **The Fourth Power Mean of Dirichlet  $L$ -functions in  $F_q[T]$ .**  
Submitted, 2019 (with M. Yiasemides)
- [2] **The First Moment of  $L(1/2, \chi)$  for Real Quadratic Function Fields.**  
Submitted, 2019 (with J. MacMillan)
- [3] **Small Zeros of Dirichlet  $L$ -functions of Quadratic Characters of Prime Modulus.**  
Submitted, 2019 (with S. Baluyot)
- [4] **Mean Values of Derivatives of  $L$ -functions in function fields: III.**  
Proc. Roy. Soc. Edinburgh Sect. A **149** (2019), 905–913
- [5] **On Elementary Estimates of Arithmetic Sums for Polynomial Rings over Finite Fields.**  
J. Number Theory **199** (2019), 49–62 (with A. Shamesaldeen and C. Summersby)
- [6] **Truncated Product Representations for  $L$ -functions in the Hyperelliptic Ensemble.**  
Mathematika **64** (2018), 137–158 (with S. Gonek and J. Keating)
- [7] **Mean Value of the class number in function fields revisited.**  
Monatsh. Math. **187** (2018), 577–602 (with H. Jung)
- [8] **On the Pairwise of Generalized Divisor Functions.**  
Q. J. Math. **69** (2018), 943–950 (with K. Smith)
- [9] **Mean Values of Derivatives of  $L$ -functions in Function Fields: II.**  
J. Number Theory **183** (2018), 24–39
- [10] **Rudnick and Soundararajan’s theorem for function fields.**  
Finite Fields Appl. **37** (2016), 311–327
- [11] **Average Values of  $L$ -series for real characters in function fields.**  
Res. Math. Sci. **3** (2016), pp.38 (with S. Bae and H. Jung)
- [12] **Mean Values of Derivatives of  $L$ -functions in Function Fields: I.**  
J. Math. Anal. Appl. **443** (2016), 526–541 (with S. Rahagopal)
- [13] **A Simple Proof of the Mean Value of  $|K_2(\mathcal{O})|$  in function fields.**  
C.R. Acad. Sci. Paris **353** (2015), 677–682
- [14] **Shifted Convolution and the Titchmarsh divisor problem over  $F_q[t]$ .**  
Philos. Trans. Roy. Soc. A **373** (2015), p. 20140308 (with L. Bary-Soroker and Z. Rudnick)
- [15] **Zeros of Dirichlet  $L$ -functions over function fields.**  
Commun. Number Theory Phys **8** (2014), 511–539 (with S. Miller, K. Pratt and M. Trinh)
- [16] **Special Sets of Primes in Function Fields.**  
Integers **14** (2014), 1–4 (with S. Miller, K. Pratt and M. Trinh)

- [17] **Newman's Conjecture in various settings.**  
J. Number Theory **144** (2014), 70–91 (with S. Miller and A. Chang)
- [18] **Conjectures for the Integral Moments and Ratios of  $L$ -functions over function fields.**  
J. Number Theory **142** (2014), 102–148 (with J. Keating)
- [19] **Hilbert-Pólya Conjecture, Zeta Functions and Bosonic Quantum Field Theories.**  
Internat. J. Modern Phys. A **28** (2013), p. 1350072
- [20] **Mean Value Theorems for  $L$ -functions over prime polynomials for the rational function field.**  
Acta Arith. **161** (2013), 371–385 (with J. Keating)
- [21] **A Note on the Mean Value of  $L$ -functions in Function Fields.**  
Int. J. Number Theory **8** (2012), 1725–1740
- [22] **The Mean Value of  $L(\frac{1}{2}, \chi)$  in the Hyperelliptic Ensemble.**  
J. Number Theory **132** (2012), 2793–2816 (with J. Keating)

[Publications: book chapters, theses and other writings](#)

- 2012 **Random Matrix Theory and  $L$ -functions in Function Fields.**  
PhD thesis, University of Bristol, 198 pages

[Grants](#)

- 2017 – 2022 **Moments of  $L$ -functions in Function Fields and Random Matrix Theory**, *The Leverhulme Trust*, Research Project Grant, £282,551.
- 2018 **SQuaRE Meeting Grant**, *American Institute of Mathematics*, (joint with H. Bui and C. David).
- 2017 **New Trends in Analytic Number Theory**, *London Mathematical Society and the Clay Mathematics Institute*, Research School Grant, £31,000.
- 2017 **Regional Meeting Award**, *London Mathematical Society*, (joint with Prof. Nigel Byott), £5,000.
- 2017 **Research in Pairs Grant**, *London Mathematical Society*, £1,200.
- 2016 **10th Anniversary Grant**, *Heilbronn Institute*, £11,500.
- 2016 **Travel Grant**, *London Mathematical Society*, Travel Grant - support to ECM, £624.

[Activities Associated with Learned Journals](#)

- 2016– **Editor for Cogent Mathematics & Statistics.**

[Invited Seminars in the UK](#)

- 2019 Queen Mary University, Warwick University
- 2018 University of Birmingham, University of Cardiff, University of Edinburgh
- 2016 University of Exeter
- 2015 University of Exeter, University of Oxford, University of Reading

- 2014 University of Nottingham
- 2012 University of Bristol

#### Invited Seminars outside the UK

- 2018 Charles University (Prague), University of Rochester (USA)
- 2017 Universidad Autónoma de Madrid (Spain), Tel-Aviv University (Israel), University of Rochester (USA)
- 2016 Brown University (USA), EPFL Lausanne (Switzerland)
- 2015 Tufts University (USA)
- 2014 University of British Columbia (Canada), University of Rochester, PUC (Brazil), Sao Paulo University - USP (Brazil), UFRGS (Brazil), Unicamp (Brazil), Tel-Aviv University
- 2013 Tel-Aviv University, Baylor University (USA), University of Rochester, IHÉS (France), Orsay University (France), Georgia Tech University (USA)
- 2012 Arizona State University (USA), University of Arizona (USA), University of Connecticut (USA)

#### Invitations to speak at Conferences

- Jun, 2020 **International Conference in Number Theory and Physics**, *Instituto de Física de Natal, Brazil*.
- Feb, 2020 **Transguanabara School of Algebraic Geometry**, *IMPA, Brazil*.
- Mar, 2019 **Conference on distribution of values of zeta functions and  $L$ -functions**, *RIKEN, Wako, Japan*.
- Feb, 2019 **Function field arithmetic conference**, *Tel-Aviv University, Israel*.
- Nov, 2018 **New Developments in the Theory of Modular Forms over Function Fields**, *Pisa, Italy*.
- April, 2017 **Number Theory in Function Fields**, *University of Bristol, UK*.
- Jul, 2016 **7th European Congress of Mathematics**, *Technische Universität Berlin, Germany*.
- 2014 **Number Theory Day**, *University of Oxford, UK*.
- Mar, 2014 **Number Theory Days**, *Lille University, France*.
- May, 2012 **II Finnish-Swedish Number Theory Conference**, *Oulu University, Finland*.
- Jun, 2012 **Workshop on automorphic forms and  $L$ -functions**, *IMAR - Bucharest, Romania*.

#### Invitations to lecture series and others

- 2015 **Mathematical Lecture Series**, *KAIST, South Korea*.
- 2013 **29th Brazilian Mathematics Colloquium - minicourse**, *IMPA, Brazil*.
- 2013 **Special Lectures in Analysis/Number Theory**, *Institute for Advanced Studies (IAS), Princeton*.
- 2013 **Semat Lecture Series**, *Unicamp, Brazil*.

### Invitations to examine postgraduate degrees

2017 Michael Tyler, Ph.D thesis at University of Exeter

### Conference organisation

- Dec, 2018 **2nd Number Theory and Function Fields at Crossroads Workshop**, *University of Exeter*.
- Dec, 2018 **LMS South West and South Wales Regional Meeting**, *University of Exeter*.
- Aug, 2018 **CMI-LMS Research School: New Trends in Analytic Number Theory**, *University of Exeter*.
- Jan, 2016 **Number Theory and Function Fields at the Crossroads Workshop**, *University of Exeter*.
- Oct, 2015 **Oxford Number Theory Day**, *University of Oxford*.
- Jun, 2015 **International Conference in Number Theory and Physics**, *IMPA*, Rio de Janeiro, Brazil.
- Oct, 2012 **MINGLE student conference**, *University of Bristol*.

### Seminar organisation

- 2016– **Algebra and Number Theory Seminar**, *University of Exeter*.
- 2016– **Pure Mathematics Colloquium**, *University of Exeter*.
- 2017 **Distinguished Rees Fellow**, *University of Exeter*.  
(Rees Fellow: Prof. Zeev Rudnick)
- 2014–2016 **Number Theory Seminar**, *University of Oxford*.
- 2011–2012 **Mathematical Physics and Beyond seminar series**, *University of Bristol*.
- 2011–2012 **Langlands Program reading group (co-organiser)**, *University of Bristol*.

### Postdocs in my group

2018–2021 Scott Kirila

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## Teaching

### Undergraduate and taught postgraduate units

- 2019 **Analytic Number Theory (ECMM741)**, *University of Exeter*, 4th year undergraduates.
- 2018 **Analytic Number Theory (ECMM741)**, *University of Exeter*, 4th year undergraduates.
- 2017 **Analytic Number Theory (ECMM741)**, *University of Exeter*, 4th year undergraduates.
- 2017 **Number Theory (ECM3704)**, *University of Exeter*, 3rd year undergraduates.
- 2016 **Number Theory (ECM3704)**, *University of Exeter*, 3rd year undergraduates.
- 2015 **Analytic Number Theory in Function Fields**, *University of Oxford*, TCC graduate course (from scratch).

- 2013 **Sieves in Number Theory (mini-course)**, *IMPA*, Rio de Janeiro, Brazil.  
(mini-course taught at the Brazilian Mathematics Colloquium)
- 2010–2012 **Analysis 1, Further Topics in Analysis, Linear Algebra and Geometry, Number Theory and Group Theory, Calculus, Computational Mathematics**, *University of Bristol*.  
(Tutorials and T.A.)

### Teaching Qualifications

- 2016 **Fellowship of the Higher Education Academy (FHEA)**.
- 2015 **Teaching Fellowship Preparation**, *University of Oxford*.
- 2013 **Sheridan Teaching Certificate**, *Brown University*.
- 2012 **Teaching in Higher Education Certificate**, *University of Bristol*.

### PhD Supervision

- 2016– Michael Yiasemides
- 2017– Asmaa Shamesaldeen
- 2018– Kevin Smith
- 2018– Joseph MacMillan

## Academic leadership and citizenship

- 2018– **Isaac Newton Institute correspondent**.
- 2018 **Full College Member**, *EPSRC*.
- 2018 **Hosted the visit of Prof. Steve Gonek**, *University of Exeter*.
- 2017–2019 **Stage coordinator for pure mathematics modules**, *University of Exeter*, coordinator for the 3rd and 4th year modules.
- 2017 **Hosted the visit of Prof. Zeev Rudnick**, *University of Exeter*.
- 2017– **Outreach Activities in Exeter**.  
Delivered several outreach activities at Exeter Math School
- 2017– **Open Day Lectures**, *University of Exeter*.  
Delivered several sample lectures to prospective students
- 2017– **Member of the London Mathematical Society**.
- 2016–2019 **Member of the Early Career Research Network (ECRN) at CEMPS**, *University of Exeter*.
- 2016– **Personal Tutor**, *University of Exeter*, personal tutor for several undergraduate students.
- 2016– **Organiser for the seminar and colloquium in pure mathematics**, *University of Exeter*.
- 2015– **Grant Reviewer**.  
reviewer for: EPSRC, NSF, American Mathematical Society, London Mathematical Society, Israel Science Foundation

2010– **Referee for the following journals:** *Classical and Quantum Gravity, Mathematical Research Letters, Journal of Number Theory, International Journal of Number Theory, American Mathematical Monthly, Journal of Physics A, Physica Scripta, International Journal of Modern Physics A, Pacific Journal of Mathematics, Philosophical Transactions of the Royal Society, Journal of the London Mathematical Society, Finite Fields and Their Applications, International Mathematics Research Notices, Research in Number Theory, Geometric and Functional Analysis, Modern Physics Letters A, Bulletin of the Australian Mathematical Society, Compositio Mathematica, Mathematical Proceedings of the Cambridge Philosophical Society, Quarterly Journal of Mathematics, Experimental Mathematics, Journal of the European Mathematical Society, Mathematika, Transactions of the American Mathematical Society.*