

Douglas Coates

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arXiv arxiv.org/a/coates_d_1

RESEARCH POSITIONS

- Postdoctoral Researcher**, FAPESP funded position under the supervision of Ali Tahzibi, Universidade de São Paulo, São Carlos, Brazil Jul. 2023 - Present
- Postdoctoral Research Associate**, EPSRC funded position under the supervision of Mark Holland, The University of Exeter, Exeter, United Kingdom Apr. 2022 - Apr. 2023
- Postdoctoral Researcher**, under the supervision of Sylvain Crovisier, Université Paris Saclay (CNRS), Paris, France Sep. 2021 - Mar. 2022

PUBLICATIONS AND PREPRINTS

- [1] Douglas Coates and Stefano Luzzatto. “Persistent Non-statistical Dynamics in One-Dimensional Maps”. In: *Communications in Mathematical Physics* 405.4 (2024), p. 102. DOI: [10.1007/s00220-024-04957-0](https://doi.org/10.1007/s00220-024-04957-0).
- [2] Douglas Coates, Ian Melbourne, and Amin Talebi. “Natural Measures and Statistical Properties of Non-Statistical Maps with Multiple Neutral Fixed Points”. 2024. DOI: [10.48550/arXiv.2407.07286](https://doi.org/10.48550/arXiv.2407.07286).
- [3] Douglas Coates, Stefano Luzzatto, and Mubarak Muhammad. “Doubly Intermittent Full Branch Maps with Critical Points and Singularities”. In: *Communications in Mathematical Physics* 402.2 (2023), pp. 1845–1878. DOI: [10.1007/s00220-023-04766-x](https://doi.org/10.1007/s00220-023-04766-x).
- [4] Douglas Coates. “Semi-Stable Laws for Intermittent Maps”. 2021. URL: <https://ore.exeter.ac.uk/repository/handle/10871/124410>.
- [5] Douglas Coates, Mark Holland, and Dalia Terhesiu. “Limit Theorems for Wobbly Interval Intermittent Maps”. In: *Studia Mathematica* 261.3 (2021), pp. 269–305. DOI: [10.4064/sm200427-21-11](https://doi.org/10.4064/sm200427-21-11).

EDUCATION

- PhD. Mathematics**, under the supervision of Mark Holland and Dalia Terhesiu, Oct. 2016 - Jan. 2021
- MSci Mathematics**, University of Bristol Sep. 2012 - Sep. 2016

VISITING POSITIONS

- Visitor of *Katrin Gelfert*, **Universidade Federal do Rio de Janeiro**, Rio de Janeiro, Brazil Jun. 2023
- Visitor of *Lorenzo Diaz*, **Pontifícia Universidade Católica do Rio de Janeiro**, Rio de Janeiro, Brazil May 2023
- Visitor of *Ali Tahzibi*, **University of São Paulo, ICMC**, São Carlos, Brazil Nov. 2022
- Visitor of *Marcelo Viana*, **Instituto de Matemática Pura e Aplicada**, Rio de Janeiro, Brazil Oct. - Nov. 2022
- Visitor of *Stefano Luzzatto*, **The Abdus Salam International Centre for Theoretical Physics**, Trieste, Italy May - Dec. 2022
- Visitor of *Stefano Luzzatto*, **The Abdus Salam International Centre for Theoretical Physics**, Trieste, Italy Feb. - Aug. 2021

TEACHING, SUPERVISION AND OUTREACH ACTIVITIES

Teaching positions

Lecturer, International Mathematics Master, Algeria *Responsibilities*: lecturing, course design, exam writing, *Courses*: 30 hour post-graduate course in probability theory Dec. 2024

Teaching Assistant, Universidade de São Paulo (ICMC), São Carlos, Brazil *Responsibilities*: lecturing, co-supervision of master's student *Courses*: post-graduate course in ergodic theory, Aug. 2023 - present

Academic Program Manager and Senior Tutor, International Mathematics Master (ICTP-UNESCO development program in COMSATS University, Lahore, Pakistan), *Responsibilities*: problems classes, lecturing, course preparation, administration, exam writing, supervision of master's thesis Jul. 2020 - Jan. 2022
Courses: post-graduate courses in commutative algebra, real analysis and measure theory, differential geometry, probability, dynamical systems, functional analysis, differential equations

Teaching Assistant at ICTP, Trieste, Italy Feb. - Aug. 2021
Responsibilities: problems classes, homework marking
Courses: dynamical systems and ergodic theory (master's level)

Teaching Assistant at the University of Exeter, Exeter, UK 2016 - 2020
Responsibilities: problems classes, exam marking, homework marking
Courses: mathematical structures (1st year), mathematical methods (1st year), signals series and transforms (2nd/3rd year), stochastic processes (2nd/3rd year), metric spaces and topology (3rd/4th year)

Short courses

Some statistical properties of non-statistical maps - 6 hour mini-course, ICMC USP, May 2024

Markov-chains and the Perron-Frobenius theorem - 6 hour online preparatory mini-course for the "VII Escola Brasileira de Sistemas Dinâmicos" Oct. 2023

Limit theorems in dynamical systems using transfer operator methods - 6 hour mini-course joint between PUC-UFRJ Jun. 2023

SELECTED RESEARCH TALKS

Weak physical measures and statistical properties of some non- statistical maps, Dynamical systems seminar Universidade Federal do Rio de Janeiro, Basil, Apr. 2024

Persistent non-statistical behaviour in one-dimension, Conference on Dynamics and Finance: from KAM Tori to ETFs, International Centre for Theoretical Physics (ICTP), Trieste, Italy Oct. 2023

Persistent non-statistical behaviour in one-dimension Dynamical systems seminar Instituto de Matematica pura e Aplicada, Rio de Janeiro, Basil July 2023

Persistent non-statistical behaviour for interval maps with neutral fixed points EDAI seminar, Pontifícia Universidade Católica do Rio de Janeiro, Brasil May 2023

Persistent non-statistical behaviour for interval maps with neutral fixed points University of Exeter, Exeter, United Kingdom Apr. 2023

Limit theorems for intermittent maps with critical points Dynamical systems seminar, Universidade de São Paulo, São Carlos, Brasil Nov. 2022

Intermittency and non-statistical behaviour Jangada Dinamica Conference - Universidade Federal do Ceará Fortaleza, Brasil Nov. 2022

Stable laws for intermittent maps with critical points and/or singularities Dynamical systems seminar, Université Paris Saclay, Paris, France Sep. 2021

EVENTS ORGANISED

[Probabilistic methods for non-stationary dynamical systems](#) - two day meeting and workshop on the applications of probabilistic techniques to random and non-stationary dynamical systems. *University of Exeter*

April 2023

LANGUAGES

English - Fluent,

Italian - Fluent,

Spanish - Fluent,

Portuguese - Intermediate.