

Davide Sclosa

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RESEARCH INTERESTS

My research relates **dynamical systems** and **combinatorics** and focuses on the following topics:

- **Ergodic Theory; Ergodic Ramsey Theory;**
- **Additive and Analytic Combinatorics;**
- **Dynamics on Graphs; Networks;**
- **Graph Theory and Random Graphs.**

WORK EXPERIENCE



UNIVERSITY
OF CRETE

POSTDOC IN MATHEMATICS

University of Crete

Nov 2024 - today

Dynamical Systems with applications in Additive Combinatorics and Analytic Number Theory. Supervisor: Nikos Frantzikinakis.



PHD IN MATHEMATICS

Vrije Universiteit Amsterdam

Nov 2020 - Nov 2024

Dynamical Systems and Graph Theory with applications in Networks. Supervisor: Christian Bick.

EDUCATION



PHD IN MATHEMATICS

Vrije Universiteit Amsterdam

Feb 2025

- Thesis about *Graph Dynamical Systems*, supervision of Christian Bick.



MASTER'S DEGREE IN MATHEMATICS - FULL MARKS AND HONORS

University of Udine

Jul 2020

- Thesis about *Lagarias-Wang Finiteness Conjecture*, supervision of Giovanni Panti.



BACHELOR'S DEGREE IN MATHEMATICS - FULL MARKS AND HONORS

University of Udine

Dec 2018

- Thesis about *groups of matrices over finite fields*, supervision of Pietro Corvaja.

PUBLICATIONS AND PREPRINTS

- **FROM COMBINATORICS TO GEOMETRY: THE DYNAMICS OF GRAPH GRADIENT DIFFUSION**
Geometriae Dedicata, vol. 219, n. 1, 2025
- **DYNAMICAL SYSTEMS ON GRAPH LIMITS AND THEIR SYMMETRIES**
with Christian Bick, *Journal of Dynamics and Differential Equations*, 1-36, 2024
- **BOUNDED POWER SERIES ON THE REAL LINE**
Journal of Mathematical Analysis and Applications, 128448, 2024

- **ALGEBRAIC GROUPS OVER FINITE FIELDS: CONNECTIONS BETWEEN SUBGROUPS AND ISOGENIES**

Journal of Group Theory, 26 (6), 1143-1155, 2023

- **THE FINITENESS CONJECTURE HOLDS IN $SL_2(\mathbb{Z}_{\geq 0})$**

with Giovanni Panti, *Nonlinearity*, 34 (8), 5234, 2021

- **COMPLETELY DEGENERATE EQUILIBRIA OF THE KURAMOTO MODEL ON NETWORKS**

Nonlinearity, vol. 37, n. 9, 2024

- **KURAMOTO NETWORKS WITH INFINITELY MANY STABLE EQUILIBRIA**

SIAM Journal on Applied Dynamical Systems Vol. 22, Iss. 4, 2023

- **DIMENSION BOUNDS FOR SYSTEMS OF EQUATIONS WITH GRAPH STRUCTURE**

arXiv preprint arXiv:2410.06840, 2024

- **A RANDOM-WALK CONCENTRATION PRINCIPLE FOR OCCUPANCY PROCESSES ON FINITE GRAPHS**

arXiv preprint arXiv:2410.06807, 2024

- **IF YOU ARE THE SMARTEST PERSON IN THE ROOM, YOU ARE IN THE WRONG ROOM**

arXiv preprint arXiv:2407.08042, 2024

TEACHING, MENTORING, AND ORGANIZING

- **TEACHING ASSISTANT**

Tutorials in Dynamical Systems, Discrete Mathematics, and Mathematical Analysis.

- **MENTORSHIP**

Co-Supervision Bachelor's student.

- **WORKSHOPS ORGANIZER**

- *Graph Stochastic Dynamics and Dynamic Stochastic Graphs (2024);*
- *Dynamics of Networks with Switching Topology (2023).*

- **HIRING COMMITTEE**

Tenure track position (2022), PhD position (2024).

CONFERENCES AND SEMINARS

Speaker at the following events:

- **University of Crete**, Grece - *Analysis Seminar*, 05/12/2024
- **Imperial College**, UK - *Dynamical Systems Seminar*, 26/03/2024
- **Lund University**, Sweden - *NetDyn2024 Workshop*, 26/08/2024
- **Exeter University**, UK - *Dynamics Seminar*, 21/03/2024
- **online** - *One World Dynamics*, 05/06/2024
- **Bernoulli Institute**, Groningen, Netherlands - *Floris Takens Seminar*, 27/9/23
- **Oxford University**, UK - *Networks Seminar*, 30/04/2024
- **Naples**, Italy - *Dynamics Days Europe 2023 (Conference)* 03/09/23 - 08/09/23

- **Portland** (Oregon), US - SIAM Dynamical Systems 2023
(Conference) 15/05/23 - 18/05/23
- **Technical University of Munich** (TUM), Germany -

Oberseminar Dynamics, 27/9/21

- **online** - Lowlands Dynamics Seminar, 28/4/2021