

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.**

WORK EXPERIENCE



POSTDOC IN MATHEMATICS

University of Crete

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

Nov 2024 - today



PHD IN MATHEMATICS

Vrije Universiteit Amsterdam

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

Nov 2020 - Nov 2024

EDUCATION



PHD IN MATHEMATICS

Vrije Universiteit Amsterdam

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

Feb 2025



MASTER'S DEGREE IN MATHEMATICS - FULL MARKS AND HONORS

University of Udine

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

Jul 2020



BACHELOR'S DEGREE IN MATHEMATICS - FULL MARKS AND HONORS

University of Udine

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

Dec 2018

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, SEMINARS, SUMMER SCHOOLS

Invited speaker indicated by (*).

- **Summer School on Additive Combinatorics, Number Theory, and Ergodic Theory,**
EPFL - Swiss Federal Technology Institute of Lausanne, Switzerland, 14/07/2025-18/07/2025
- **Perspectives on Ergodic Theory and its Interactions — celebrating Vitaly Bergelson's work and impact,**
Institute of Mathematics of the Polish Academy of Sciences, Warsaw, Poland, 23/07/2025-27/07/2025
- **Analysis Seminar,**
University of Crete, Greece, 05/12/2024 ()*
- **NetDyn2024 Workshop,**
Lund University, Sweden, 26/08/2024 ()*

- **Dynamics Days Europe,**
Bremen, Germany, 29/07/2024 - 02/08/2024
- **Hypergraphs: Theory and Applications,**
The Alan Turing Institute, Isaac Newton Institute, London, UK, 22/07/2024 - 29/07/2024
- **One World Dynamics,**
Online, 05/06/2024 (*)
- **Networks Seminar,**
Oxford University, UK, 30/04/2024 (*)
- **Dynamical Systems Seminar,**
Imperial College, London, UK, 26/03/2024 (*)
- **Dynamics Seminar,**
Exeter University, Exeter, UK, 21/03/2024 (*)
- **Floris Takens Seminar,**
Bernoulli Institute, Groningen, Netherlands, 27/9/23
- **Dynamics Days Europe,**
Naples, Italy, 03/09/23 - 08/09/23 (*)
- **SIAM Dynamical Systems,**
Portland, US, 15/05/23 - 18/05/23 (*)
- **Oberseminar Dynamics,**
TUM - Technical University of Munich, Munich, Germany, 27/9/21 (*)
- **Lowlands Dynamics Seminar,**
Online, 28/4/2021 (*)