

Davide Sclosa

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<https://davidesclosa.github.io>

RESEARCH INTERESTS

My research relates **discrete** and **continuous** mathematics and focuses on the following topics:

- **Dynamical Systems;**
- **Ergodic Ramsey Theory;**
- **Dynamics on Graphs and Networks;**
- **Additive and Analytic Combinatorics;**
- **Finite Graphs and Random Graphs;**
- **Matrix Groups and Group Actions.**

EDUCATION



PHD IN MATHEMATICS
Vrije Universiteit Amsterdam

Jan 2025 (expected)

- 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

- **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
- **FROM COMBINATORICS TO GEOMETRY: THE DYNAMICS OF GRAPH GRADIENT DIFFUSION**
arXiv preprint arXiv:2308.08311, 2023

WORK EXPERIENCE

PHD IN MATHEMATICS

Vrije Universiteit Amsterdam

Nov 2020 - Nov 2024

- **RESEARCH**

- *Research about Graph Dynamical Systems under the supervision of Christian Bick;*
- *Independent research on other topics as single author and in teams.*

- **TEACHING ASSISTANT**

Tutorials in Discrete Mathematics, Dynamical Systems, 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

Invited speaker at the following events:

- **Lund University**, Sweden - NetDyn2024 Workshop, 26/08/2024
- (online) - One World Dynamics, 05/06/2024
- **Oxford University**, UK - Networks Seminar, 30/04/2024
- **Imperial College**, UK - Dynamical Systems Seminar, 26/03/2024
- **Exeter University**, UK - Dynamics Seminar, 21/03/2024
- **Bernoulli Institute**, Groningen, Netherlands - Floris Takens Seminar, 27/9/23
- **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