Davide Sclosa

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RESEARCH INTERESTS

I am interested in connections between *discrete* and *continuous structures* in mathematics, in particular, between combinatorics and dynamical systems. I like to work with graphs, maps, measures, flows, groups, generating functions.

WORK EXPERIENCE

PHD IN MATHEMATICS   Nov 2020 - Nov 2024
Vrije Universiteit Amsterdam

I am pursuing a PhD in dynamical systems on graphs under the supervision of Christian Bick, investigating connections between dynamics and graph theory. During the PhD, I also conducted independent research in combinatorics and in analysis, participated as invited speaker at international events, served as a teaching assistant, supervised a Bachelor student, and organized workshops.

EDUCATION

MASTER'S DEGREE IN MATHEMATICS - FULL MARKS AND HONORS   Jul 2020
University of Udine

I graduated with full marks and honors under the supervision of Giovanni Panti, with a thesis proving a special case of the *Lagarias-Wang Finiteness Conjecture*. The result combines on combinatorics of words with hyperbolic geometry and is applied to the study of hyperbolic billiards.

BACHELOR'S DEGREE IN MATHEMATICS - FULL MARKS AND HONORS   Dec 2018
University of Udine

I graduated with full marks and honors under the supervision of Pietro Corvaja, with a thesis on algebraic groups over finite fields. The main result relates coverings of a linear algebraic group to popular subgroup indexes in the groups of rational points over finite fields.

PUBLICATIONS

- **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** $SL(2, Z >= 0)$

  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 SystemsVol. 22, Iss. 4, 2023

- **IF YOU ARE THE SMARTEST PERSON IN THE ROOM, YOU ARE IN THE WRONG ROOM**
  arXiv preprint arXiv:2407.08042, 2024

- **GRAPH GRADIENT DIFFUSION**
  arXiv preprint arXiv:2308.08311, 2023

TEACHING AND MENTORSHIP EXPERIENCE

- **TEACHING ASSISTANT** 2020-2024
  I led tutorials, study sessions, and helped preparing and grading exams in the following courses: Discrete Mathematics, Dynamical Systems, Mathematical Analysis.

- **MENTORSHIP** 2023
  I supervised a Bachelor's student through weekly meetings, providing ongoing thesis feedback and guidance.

ACADEMIC SERVICE AND EVENT ORGANIZATION

- **WORKSHOPS ORGANIZER**
  I co-organized the following workshops:
    - *Graph Stochastic Dynamics and Dynamic Stochastic Graphs (2024);*
    - *Dynamics of Networks with Switching Topology (2023).*

- **HIRING COMMITTEE**
  I served in two hiring committees, one in 2022 for two tenure track positions, one in 2024 for one PhD position.

CONFERENCES AND SEMINARS

- **CONFERENCES**
  *I was **invited speaker** at the following international conferences.*
    - *Naples, Italy - Dynamics Days Europe 2023 03/09/23 - 08/09/23*
    - *Portland (Oregon), US - SIAM Dynamical Systems 2023 15/05/23 - 18/05/23*

- **SEMINARS**
  *I was **invited speaker** at the following seminars and workshops.*
    - *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*
    - *Technical University of Munich (TUM), Germany - Oberseminar Dynamics, 27/9/21*
    - *(online) - Lowlands Dynamics Seminar, 28/4/2021*