

Curriculum Vitae

Chiara Calascibetta

Born November 14, 1997, in Rome (Italy)

Nationality: Italian

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EDUCATION

Nov. 2021 - present

Ph.D. student in Physics, University of Rome “Tor Vergata”.

Thesis supervisor: Prof. Luca Biferale

co-supervisor: Dr. Massimo Cencini

May 2021

Master’s degree in Theoretical Physics (*Statistical Mechanics*) - University of Rome “Tor Vergata”.

Official duration: one academic year 2019/20

Thesis title: “Reinforcement Learning algorithms to control the dynamics of some agents in chaotic flows”

Thesis supervisors: Proff. Luca Biferale & Roberto Benzi / Dr. Massimo Cencini

Final degree mark: **110/110 *cum laude***

Weighted Average: 30/30

Number of honors: 8

Sept. 2019

Bachelor’s degree in Physics - University of Rome “Tor Vergata”

Thesis title: “The Zermelo’s Navigation Problem following Optimal Control”

Thesis supervisors: Prof. Luca Biferale / Dr. Michele Buzzicotti

Final degree mark: **110/110 *cum laude***

Weighted Average: 29,40/30

Number of honors: 10

July 2016

High school leaving qualification in scientific studies

Final mark: 100/100

RESEARCH INTEREST

I am specializing in the field of Statistical Mechanics with interest in **turbulent** and **complex systems**. My main research activity is focused on the study of control problems using both data-driven (**Reinforcement Learning**) and equation-informed (**Optimal Control**) approaches. In particular, I am studying systems of Lagrangian active particles navigating in complex fluids, optimizing their navigation in order to achieve specific goals.

AWARDS & SCHOLARSHIPS

Sept. 2023

Euromech Young Scientist Prize at the 18th European Turbulence Conference (**ETC18**)

Motivation: for the best oral presentation given by an attendee under the age of 35 years

July 2022

National Award Milla Baldo Ceolin 2021 “Women in Theoretical Physics” award given by INFN. Motivation: to the best Master Theses in Theoretical Physics in 2021

Apr. 2021

Scholarship “Enrico Persico” 2021 - Accademia Nazionale dei Lincei 1st classified

Motivation: among the best undergraduate students in physics in Rome

2017/2020

Deserving Student Award, a.y. 2017/18, 2018/19, 2019/20. 1st classified among all students enrolled in the bachelor/master’s degree in Physics at the University of Rome Tor Vergata.

2018/19

Winner of the **Degree Award** - Lazio DiSCo

2017/18

Winner of the Award student of particular merit, a.y. 2017/18. Reserved for the 5% most talented students at the University of Rome Tor Vergata enrolled in the 2016/17 a.y.

2017/18/19/20

Winner of the Right to Education - **Lazio DiSCo**

PUBLICATIONS

- **Calascibetta, C.**, Biferale, L., Borra, F., Celani, A. and Cencini, M. Optimal tracking strategies in a turbulent flow. *Commun Phys* **6**, 256 (2023).
- **Calascibetta, C.**, Biferale, L., Borra, F., Celani, A. and Cencini, M. Taming Lagrangian chaos with multi-objective reinforcement learning. *Eur. Phys. J. E* **46**, 9 (2023).
- Biferale, B., Bonaccorso, F., Buzzicotti M. and **Calascibetta, C.** TURB-Lagr. A database of 3d Lagrangian trajectories in homogeneous and isotropic turbulence. arXiv preprint arXiv:2303.08662 (2023).

REVIEWING ACTIVITIES

Referee for: European Physical Journal E (**EPJE**), Physical Review E (**PRE**).

MEMBERSHIPS

2022 - present **APS**, (American Physical Society)
2021 - present **INFN** (National Institute for Nuclear Physics)

SCHOOLS AND OTHER ACTIVITIES

15-25 Aug. 2023 Summer school Frontier of Mixing (**IESC**, Corsica, organized within the Marie-Curie Skłodowska ITN **CoPerMix**)
26 June - 7 July 2023 Summer school 100 years of turbulent cascades (**Université Côte D'Azur**, Nice, France)
21 April 2023 **Outreach activity** (High school in L'Aquila, Italy) discussion about 'Deterministic Chaos'
28 Aug. - 2 Sept. 2022 10th summer school Complex Motion in Fluids - **University of Twente** (Twente, Netherlands)
7-9 Mar. 2022 Introduction to Parallel Computing with MPI and OpenMP - **CINECA**
7-11 Feb. 2022 Hands on Machine Learning for Fluid Dynamics - **VKI for Fluid Dynamics**
31 Jan. - 4 Feb. 2022 HPC in Data Science: Introduction to Parallel Programming - **SCtrain**
13-17 Dec. 2022 Virtual School on Numerical Methods for Parallel CFD - **CINECA**
22-26 Nov. 2021 Data Science and Deep Learning with Python - **CINECA**
Sept. 2020 Online PhD School on Machine and Reinforcement Learning, Rare Events and Tensor Networks - (University of Rome Tor Vergata)
June 2019 School on Scientific Data Analytics and Deep Learning - **CINECA** (Rome)
Mar. 2016 International Masterclass IPPOG - **INFN** (National Institute of Nuclear Physics)

Talks - Conferences

5 Sept. 2023 **18th European Turbulence Conference** (4-6 Sept. 2023, Valencia, Spain)
3 July 2023 **Summer school 100 years of turbulent cascades** (26 June - 7 July 2023, Nice, France)
30 May 2023 **Math 2 Product (M2P) Conference** (30 May - 2 June 2023, Taormina, Italy)
9-11 Jan. 2023 **Dynamics Days US 2023** (Online) hosted by the Mathematic Department of Trinity College
20 Nov. 2022 **75th Annual Meeting of the APS Division of Fluid Dynamics** (20-22 Nov. 2022, Indianapolis, Indiana)
21 Oct. 2022 **National Award Milla Baldo Ceolin 2021 "Women in Theoretical Physics"** - **INFN** (21 Oct. 2022, GGI, Firenze)
14 Sept. 2022 **14th European Fluid Mechanics Conference** (13-16 Sept. 2022, Athens, Greece)
29 Aug. 2022 **10th summer school Complex Motion in Fluids - University of Twente** (28 Aug. - 2 Sept. 2022, Bad Boekelo, Enschede, Netherlands)
7 July 2022 **Workshop Challenges and Benchmarks for quantitative AI in Complex Fluids and Complex Flows** (6-8 July 2022, **CREF**)
27 June 2022 **INFN FieldTurb Meeting** (27-28 June 2022, University of Rome La Sapienza)
11 May 2022 70 years **INFN** (division Roma Tor Vergata, Villa Mondragone)

Date
3/11/2023

Signature
