



Federica Ferretti

f.ferretti@uniroma1.it

Current affiliation:

- Dipartimento di Fisica, Università di Roma La Sapienza, 00185 Rome, Italy - Istituto Sistemi Complessi, Consiglio Nazionale delle Ricerche, UOS Sapienza, 00185 Rome, Italy

EDUCATION AND RESEARCH

PhD, Università di Roma La Sapienza, Rome, Italy — 2018–Present

I take part in the PhD program at the Physics Department of La Sapienza University.

Advisor: Irene Giardina. Project title: 'Quantifying offequilibrium effects in the dynamics of animal groups'.

Visiting student, École Normale Supérieure, Paris, France — February– July 2020

I visited the group of Drs Aleksandra Walczak and Thierry Mora at LPT-ENS for an ongoing collaboration.

Physics Master degree, Università di Roma La Sapienza, Rome, Italy — 2018

Grade: 110/110 cum laude

Internship for master thesis, École Normale Supérieure, Paris, France — March–July 2018

I worked on my master thesis project 'Statistical inference for the dynamics of bird flocks' under the joint supervision of Thierry Mora, Aleksandra Walczak and Irene Giardina.

Bachelor of Sciences (Physics), Università di Roma La Sapienza, Rome, Italy — 2016

Grade: 110/110 cum laude

Student of the Superior School for Advanced Studies, Rome, Italy — 2013-2018

Selective interdisciplinary program (~4 students/year in STEM) for undergraduate and graduate students at La Sapienza, with scholarship.

ATTENDED WORKSHOPS AND SCHOOLS

Theoretical Biophysics, Boulder School for Condensed Matter and

Materials Physics, University of Colorado — July 2019

3rd Course on Multiscale Integration in Biological Physics, Institut Curie, Paris, France — November 2018

TEACHING EXPERIENCE

Teaching Assistant, Luiss Guido Carli, Rome, Italy — 2019–Present

I work as TA for the course 'Mathematical Methods for Economics and Finance' of Prof. Fausto Gozzi.

SKILLS

Scientific background

I am a theorist. My major interests are Non-equilibrium Statistical Mechanics and Active Matter. My undergraduate studies mainly focused on Field Theory, Critical Phenomena, Stochastic Calculus and Statistical Mechanics. I have a little experience with Bayesian Inference and Time Series Analysis. During the late master and the PhD I had the opportunity to confront with analytical work, not too complicated molecular dynamics simulation for active matter, experimental data analysis. I am familiar with Python, C++, C and elements of Mathematica.

Language

Native Italian speaker; proficient knowledge of English and French.

PUBLICATIONS AND PREPRINTS

F. Ferretti, V. Chardès, T. Mora, A. M. Walczak, I. Giardina. Building general Langevin models from discrete datasets. *Phys. Rev. X* 10 (Jul 2020), 031018.

F. Ferretti, V. Chardès, T. Mora, A. M. Walczak, I. Giardina. A Renormalization Group Approach to Connect Discrete- and Continuous-time Descriptions of Gaussian Processes. [arXiv:2101.06482](https://arxiv.org/abs/2101.06482).

ACADEMIC REFERENCES

Irene Giardina

Dipartimento di Fisica
Università di Roma La Sapienza
P. A. Moro 2, 00185 Rome, Italy
irene.giardina@roma1.infn.it

Aleksandra Walczak

Laboratoire de Physique
École Normale Supérieure 24 rue
Lhomond, 75231 Paris, France
aleksandra.walczak@phys.ens.fr

Thierry Mora

Laboratoire de Physique
École Normale Supérieure
24 rue Lhomond, 75231 Paris, France
thierry.mora@ens.fr