





# Giulia GARCIA LORENZANA


Postdoctoral Fellow

 NITMB, University of Chicago

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## About Me

I am a postdoctoral fellow at **NITMB** (Chicago). My main research interest is the **Statistical Physics of Disordered Systems** and its applications to **Theoretical Ecology**, with a focus on out-of-equilibrium dynamics. I obtained my PhD degree in Theoretical Physics at École Normale Supérieure, under the supervision of Giulio Biroli and Ada Altieri.

## Languages

Italian

Spanish

English

French

## Work Experience

2025 – present

Postdoctoral Fellow

NITMB, University of Chicago

## Education

2022 – 2025

PhD in Physics

École Normale Supérieure, Université Paris Cité, Paris

*Coupling complex systems: from ecological metacommunities to non-reciprocal interactions.* Supervisors: Giulio Biroli, Ada Altieri

2019 – 2022

Diplome de l'ENS

École Normale Supérieure, Paris

2019 – 2021

Master in Theoretical Physics

École Normale Supérieure, Paris

2016 – 2019

Bachelor in Physics

La Sapienza, Rome

2016 – 2019

Superior School of Advanced Studies

La Sapienza, Rome

## Summer schools

2024

Complex and Glassy Systems

Cargèse

2024

Concepts and Methods of Statistical Physics

Beg Rohu

2023

Statistical Physics of Complex Systems

Beg Rohu

2022

Out of Equilibrium Dynamics

Beg Rohu

2021

Statistical Mechanics and Emergent Phenomena in Biology

Beg Rohu

## Publications

2024

Non-reciprocal spin-glass transition and aging

G. Garcia Lorenzana, A. Altieri, G. Biroli, M. Fruchart, V. Vitelli

arXiv:2408.17360 — accepted on PRL

2024

Interactions and migration rescuing ecological diversity

G. Garcia Lorenzana, A. Altieri, G. Biroli

PRX Life **2**, 013014 — Featured in Le Monde and Physics Magazine

2024

Corrections to the Bethe lattice solution of Anderson localization

M. Baroni, G. Garcia Lorenzana, T. Rizzo, M. Tarzia

Phys. Rev. B **109**, 174216 — Editor's suggestion

2022

Well-mixed Lotka-Volterra model with random strongly competitive interactions

G. Garcia Lorenzana, A. Altieri

Phys. Rev. E **105**, 024307

## Teaching

2025

Electromagnetism

Teaching assistant, 28 hours

CPES

2022 – 2024

Mathematics for Physicists

Teaching assistant, 40 hours per year

ENS

## Workshop and schools organization

2025

INTP Spring School - Mathematical Theory in Community Ecology

INTP, France

2024

From Ecology to Economy and back

ENS, CFM

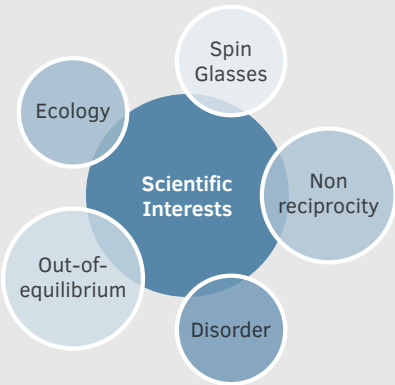
2023

Microbial community ecology: bridging theory and observations



Max Planck Institute, Plön

# Giulia GARCIA LORENZANA

Postdoctoral Fellow



## Skills

-  C, python,  $\text{\LaTeX}$ , MATLAB, Wolfram Mathematica, Linux, Vim.
-  Theoretical background: Replica and Cavity Method, Dynamical Mean Field Theory, Statistical Field Theory, M-layer construction.

## Talks

### Invited Talks

2024	Webinar GDR IDE	CNRS
2024	Intcha24	Max Planck Institute, Dresden
2024	From Ecology to Economy and back	ENS, CFM
2024	SIFS Young Seminar	Italian Statistical Physics Society

### Seminars

2024	Department of Computing Sciences	Bocconi, Milan
2024	David Huse Group	Princeton
2024	PLS Short Talks	MIT
2024	David Nelson Group	Harvard
2024	Vitelli Group	University of Chicago
2023	Theory Group	Institut Curie

### Selected contributed Talks

2025	STATPHYS29	Florence, Italy
2024	Journées de Physique Statistique	UPC
2023	STATPHYS28	University of Tokyo
2023	Cophee	University of Tokyo
2023	YITP-YSF symposium	Kyoto University
2023	Paris Biological Physics Community day	ENS
2023	Journées de Physique Statistique	ENS
2022	Eco-evolutionary Dynamics of Microbial Communities Across Scales	ICTP, Trieste

### Outreach

2024	"Speed meetings" with middle school students	ENS
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## Awards and scholarships

2022	Contrat Doctoral Spécifique Normalienne
2019	Concours Sélection Internationale
2019	First of my year in ranking of Sapienza Physics students for attribution of fees reduction based on academic performance.
2016	Admission to the Superior School of Advanced Studies Sapienza
2016	Silver Medal in the Italian Mathematical Olympics.
2016	Third place in the Mediterranean Youth Mathematical Championship as member of the Italian team.