

OCTOBER 13, 2025

# ALBERTO DINELLI

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## EDUCATION

2024-09 – Present	<b>Postdoc</b> Département de biochimie · Université de Genève · Geneva <b>Advisor:</b> Karsten Kruse.
2021-10 – 2024-08	<b>Ph.D. - Physique en Île de France</b> Laboratoire Matière et Systèmes Complexes, Université Paris Cité · Paris <b>Thesis:</b> Scalar Active Matter across scales · <b>Supervisor:</b> Julien Tailleur. <ul style="list-style-type: none"> <li>· Visiting period at MIT, group of Prof. J. Tailleur · Cambridge, US</li> <li>· Visiting period at YITP, group of Prof. H. Hayakawa · Kyoto, JP</li> <li>· Visiting period at MIT, group of Prof. J. Tailleur · Cambridge, US</li> </ul>
2023-10 – 2023-11	
2023-07	
2022-10	
2019-09 – 2021-07	<b>Master in Physics of Complex Systems - International track</b> Politecnico di Torino · Torino — Université Paris-Saclay · Paris <b>Final mark:</b> 110/110 cum laude <b>French M2 mark:</b> 18/20 <b>Thesis:</b> Self-organization of active mixtures · <b>Supervisor:</b> Julien Tailleur. <ul style="list-style-type: none"> <li>· Visiting period at SISSA, ICTP · Trieste</li> </ul>
2019-09 – 2020-02	
2016-09 – 2019-07	<b>Bachelor degree in Physics</b> Università di Pisa · Pisa <b>Final mark:</b> 110/110 cum laude <b>Thesis:</b> Rayleigh Taylor instability on a thin layer of fluid accelerated by the radiation pressure. · <b>Supervisor:</b> Francesco Pegoraro.

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## TEACHING

2024 - 2025	<ul style="list-style-type: none"> <li>· Teaching assistant, <i>Introduction to computer science</i> (Bachelor, 1st year) · Université de Genève (Geneva)</li> </ul>
2021 - 2024	<ul style="list-style-type: none"> <li>· Teaching assistant, <i>Physics of Materials</i> (Bachelor, 1st year) · IUT Pajol (Paris)</li> <li>· Teaching assistant, <i>Photonics</i> (Bachelor, 2nd year) · IUT Pajol (Paris)</li> </ul>

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## PUBLICATIONS

1. Q. M. Nguyen, [A. Dinelli](#), G. Spera, J. Tailleur, “Contact forces in motility-regulated active matter”. arXiv:2507.08964 (2025).
  2. [A. Dinelli](#), A. Altieri, J. Tailleur, “Random motility regulation drives the fragmentation of microbial ecosystems”. arXiv:2503.12692 (2025).
  3. T. Lefranc, [A. Dinelli](#), C. Fernández-Rico, R. Dullens, J. Tailleur, D. Bartolo, “Synthetic quorum sensing and absorbing phase transitions in colloidal active matter”. Phys. Rev. X 15, 031050 (2025).
  4. [A. Dinelli](#), “Scalar active matter across scales”. PhD Thesis (2024).
  5. [A. Dinelli](#), J. O’Byrne, J. Tailleur, “Fluctuating hydrodynamics of active particles interacting via chemotaxis and quorum sensing: static and dynamics”. J. Phys. A 57, 395002 (2024).
  6. [A. Dinelli](#), J. O’Byrne, A. Curatolo, Y. Zhao, P. Sollich, J. Tailleur, “Non-reciprocity across scales in active mixtures”. Nature Communications 14, 7035 (2023).
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## PRESENTATIONS

### Invited talks

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|---------|---|
| 2025-06 | · <i>Interdisciplinary challenges in the physics of complexity and life 2025 (IntCha25)</i> · EMBL Heidelberg, Heidelberg |
| 2025-05 | · <i>Conservation laws and non-reciprocity</i> · Universität Münster, Münster   |

### Contributed talks

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|---------|--|
| 2025-07 | · STATPHYS29 · Firenze   |
| 2023-08 | · STATPHYS28 · University of Tokyo, Tokyo  |
| 2023-08 | · <i>Frontiers in nonequilibrium physics: Active matter, topology and beyond</i> · YITP, Kyoto |
| 2023-06 | · EDPIF Scientific Day · Sorbonne University, Paris  |
| 2022-11 | · <i>Physics of Microbial Motility Workshop</i> · ESPCI, Paris                                 |
| 2022-10 | · <i>Greater Boston Area Statistical Mechanics Meeting</i> · UMass-Amherst, Amherst            |
| 2022-06 | · CECAM workshop <i>New Frontiers in Liquid Matter</i> · Sorbonne Jussieu, Paris               |

### Seminars

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|---------|--|
| 2025-10 | · Final audition for <i>thesis prize by Systèmes Complexes 2025</i> · Maison des sciences de l’homme et de l’environnement, Besançon |
| 2025-09 | · Biochemistry department seminar · Université de Genève, Geneva   |
| 2024-04 | · K. Kruse’s group · Université de Genève, Geneva  |
| 2024-02 | · <i>Spring College of Physics of Complex Systems 2024</i> · ICTP, Trieste   |
| 2024-01 | · M. Shelley’s group · CCB, Flatiron Institute, New York   |
| 2023-10 | · D. Nelson’s group · Harvard University, Cambridge  |
| 2023-10 | · P. Mehta and K. Koroloev’s groups · Boston University, Boston  |
| 2023-10 | · M. Hagan’s group · Brandeis University, Waltham  |
| 2023-07 | · Advanced Statistical Dynamics Group · YITP, Kyoto  |
| 2023-03 | · Institut Curie Theory Group · Institut Curie, Paris  |
| 2022-10 | · MIT Physics of Living Systems · MIT, Cambridge   |

### Flash talks

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|---------|---|
| 2024-01 | · <i>Journées de Physique Statistique 2024</i> · ENS, Paris |
| 2023-01 | · <i>Journées de Physique Statistique 2023</i> · ENS, Paris |
| 2022-01 | · <i>Journées de Physique Statistique 2022</i> · ENS, Paris |

2021-11

· *Multiscale integration in Biological Systems* · Institut Curie, Paris

### Poster presentations

2023-08

· *From Soft Matter to Biophysics 2025* · Les Houches School · Best Poster Prize

2023-08

· *Perspectives on Non-Equilibrium Statistical Mechanics* · YITP, Tokyo

2023-06

· *Active matter at surfaces and in complex environments* · MPIPKS, Dresden

2023-05

· *Workshop on Signatures of Nonequilibrium fluctuations in life* · ICTP, Trieste

2022-12

· *Population dynamics: from rare events to evolution* · Université Grenoble Alpes, Grenoble

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## OTHER INFORMATION

### Awards

2025

· Best Poster Prize @ Les Houches Winter School

2023

· International Mobility Fellowship

2021 - 2024

· IdEX International PhD Fellowship

2020 - 2021

· Paris-Saclay International Master's Scolarship