

JANUARY 27, 2026

ALBERTO DINELLI

<i>Born in</i>	Lucca (Italia), 07/10/1997
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EDUCATION

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

TEACHING

2024 - 2026	<ul style="list-style-type: none"> · Teaching assistant, <i>Introduction to computer science</i> (Bachelor, 1st year) · Université de Genève (Geneva)
2021 - 2024	<ul style="list-style-type: none"> · Teaching assistant, <i>Physics of Materials</i> (Bachelor, 1st year) · IUT Pajol (Paris) · Teaching assistant, <i>Photonics</i> (Bachelor, 2nd year) · IUT Pajol (Paris)

PUBLICATIONS

1. A. Dinelli, L. Dumoulin, K. Kruse, "Active topological strings in renewing nematopolar fluids". arXiv:2601.18307 (2026)
 2. Q. M. Nguyen, A. Dinelli, G. Spera, J. Tailleur, "Contact forces in motility-regulated active matter". arXiv:2507.08964 (2025).
 3. A. Dinelli, A. Altieri, J. Tailleur, "Random motility regulation drives the fragmentation of microbial ecosystems". arXiv:2503.12692 (2025).
 4. 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).
 5. A. Dinelli, "Scalar active matter across scales". PhD Thesis (2024).
 6. 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).
 7. 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 |
| 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. Korolov'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

- 2024-01 · *Journées de Physique Statistique 2024* · ENS, Paris
- 2023-01 · *Journées de Physique Statistique 2023* · ENS, Paris
- 2022-01 · *Journées de Physique Statistique 2022* · 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 Scholarship