

# Ruben Zakine

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## Academic path

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| <b>NYU Materials Research Science and Engineering Center (MRSEC)</b><br><i>Post-doctoral Associate in Statistical Physics</i><br>Research activity under the joint supervision of Jasna Brujic at the Center for Soft Matter Research, and Eric Vanden-Eijnden at the Courant Institute.   | <b>New York</b><br>2019–now   |
| <b>Laboratoire Matière et Systèmes Complexes, Université Paris Diderot</b><br><i>PhD in Statistical Physics and Soft Matter</i><br>PhD title: “Mediated interactions in soft matter and surface tension of active fluid”.<br>Advisors: Jean-Baptiste Fournier and Frédéric van Wijland.<br>Visiting student at Tokyo Metropolitan University under the supervision of Pr. Shigeyuki Komura (January–March 2018) and at Gilman Hall at the University of California, Berkeley, with Pr. Kranthi Mandadapu (April–May 2019).<br>Attended Beg Rohu summer school (2016) and Les Houches - Active Matter and Non-Equilibrium Statistical Physics summer school (2018). | <b>Paris</b><br>2016–2019     |
| <b>École Normale Supérieure, International Center for Fundamental Physics</b><br><i>2nd year Master, Quantum Mechanics and Statistical physics</i>   | <b>Paris</b><br>2015–2016     |
| <b>École polytechnique, Paris-Saclay</b><br><i>1st year Master, High Energy Physics</i><br>Courses: Astrophysics, General Relativity, Particle Physics, Quantum Field Theory.  | <b>Palaiseau</b><br>2014–2015 |
| <b>École polytechnique, Paris-Saclay</b><br><i>Engineer's degree</i><br>Courses: Mathematics, Mechanics, Physics, Chemistry, Molecular Biology, Humanities.  | <b>Palaiseau</b><br>2012–2015 |
| <b>Lycée Louis Le Grand</b><br><i>Preparatory class for entrance to Grandes Écoles, Mathematics, Physics and Chemistry</i>   | <b>Paris</b><br>2009–2012     |
| <b>Lycée Louis Le Grand</b><br><i>Scientific Baccalauréat</i><br>High school diploma in science, summa cum laude.  | <b>Paris</b><br>June 2009     |

## Experience

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| <b>Teaching</b> .....  |  |
| <b>Université Paris Descartes</b><br><i>Teaching assistant in Physics for first year medical students (PACES)</i>  | <b>Paris</b><br>2016–2019                |
| <b>Internships</b> .....   |  |
| <b>Laboratoire Matière et Systèmes complexes - UMR 7057</b><br><i>2nd year Master: Field mediated Interactions between Active Spins</i>  | <b>Paris</b><br>January 2016–May 2016    |
| <b>Institut d'Astrophysique de Paris - UMR 7095</b><br><i>1st year Master: Synchrotron Emission in relativistic shocks associated to Gamma Ray Bursts March 2015–July 2015</i><br>Advisor: Martin Lemoine. | <b>Paris</b><br>March 2015–July 2015     |
| <b>Laboratoire Central de la Préfecture de Police</b><br><i>Research and development in Fire Engineering.</i>  | <b>Paris</b><br>November 2012–April 2013 |

## Language and computer skills

**Language:** French (native speaker), English (fluent/professional use), Spanish (basic), German (basic)  
**Edition:** Word, LaTeX, Excel, PowerPoint  
**Programming and simulations:** Java, Python, C

## Publications

Ruben Zakine, Yongfeng Zhao, Miloš Knežević, Adrian Daerr, Yariv Kafri, Julien Tailleur, and Frédéric van Wijland. Surface tensions between active fluids and solid interfaces: bare vs dressed. *Physical Review Letters*, 124(24):248003, 2020.

Ruben Zakine, Jean-Baptiste Fournier, and Frédéric van Wijland. Spatial organization of active particles with field-mediated interactions. *Physical Review E*, 101(2):022105, 2020.

Ruben Zakine, Dasith de Silva Edirimuni, Doru Constantin, Paolo Galatola, and Jean-Baptiste Fournier. Interaction and structuration of membrane-binding and membrane-excluding colloidal particles in lamellar phases. *Soft matter*, 15(21):4351–4362, 2019.

Ruben Zakine, Jean-Baptiste Fournier, and Frédéric van Wijland. Field-embedded particles driven by active flips. *Phys. Rev. Lett.*, 121:028001, Jul 2018.

Ruben Zakine, Alexandre Solon, Todd Gingrich, and Frédéric van Wijland. Stochastic Stirling engine operating in contact with active baths. *Entropy*, 19(5):193, 2017.

Ruben Zakine and Martin Lemoine. The elusive synchrotron precursor of collisionless shocks. *Astronomy and Astrophysics*, 601:A64, May 2017.

## Miscellaneous

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Trumpet player in jazz bands and orchestras.