YANN-EDWIN KETA

Postdoctoral researcher

November 24th, 1995

French/EU citizen

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yketa.xyz

github.com/yketa

Education

2020-2023
PhD in Physics
Université de Montpellier
Under the joint supervision of Ludovic Berthier and Robert L. Jack.

2016-2018
MSc in Physics *High honours*
École normale supérieure de Lyon
Specialisation in computational physics, soft matter, and statistical physics.

2015-2016
BSc in Physics *High honours*
École normale supérieure de Lyon

2013-2015
Classes préparatoires aux grandes écoles (PCSI/PC*)
Lycée Lakanal, Sceaux

2018-2019 (Gap year)
MA in Social sciences *1st year*
École normale supérieure de Lyon

Skills

Programming

* Expert in Python, bash, C/C++.
* Proficient in Git, Mathematica.
* Molecular dynamics, CPU and GPU parallelisation, biased path ensemble algorithm.

Languages

French – Native speaker
English – Fluent
Dutch – Beginner

Interests

* Extreme music.
* Free software, open knowledge.
* Environment protection.
* French and non-French literature.

Research

Oct 2023 - Present
Postdoc: "Computational models of cell sheets"
Instituut-Lorentz for Theoretical Physics, Universiteit Leiden
Supervisor: Silke Henkes

Sep 2020 - Sep 2023
PhD: "Collective dynamics in model active matter"
Laboratoire Charles Coulomb, UMR 5221 CNRS, Université de Montpellier
Simons Collaboration on *Cracking the Glass Problem*
Supervisors: Ludovic Berthier (Montpellier, Cambridge), Robert L. Jack (Cambridge)

ENS-funded internships

Oct 2019 - July 2020
"Active work in systems of self-propelled particles"
Department of Applied Mathematics and Theoretical Physics, University of Cambridge
Laboratoire Matière et Systèmes Complexes, UMR 7057 CNRS, Université de Paris
Supervisors: Robert L. Jack, Michael E. Cates (Cambridge), Frédéric van Wijland (Paris)

Jan 2018 - Jul 2018
"Simple model of active particles"
Stewart Blusson Quantum Matter Institute, University of British Columbia
Supervisor: Jörg Rottler

May 2017 - Jul 2017
"Numerical analysis of jamming criticality for spheroidal particles"
Institutionen för fysik, Umeå universitet
Supervisor: Peter Olsson

Jun 2016 - Jul 2016
"Leidenfrost drop impacts on surfaces with micrometric defects"
Institut Lumière Matière, UMR 5306 CNRS, Université Claude Bernard Lyon 1
Supervisors: Quentin Ehlinger, Christophe Ybert

Publications

Y.-E. Keta, J. U. Klamser, R. L. Jack, and L. Berthier, "Emerging mesoscale flows and chaotic advection in dense active matter", *arXiv* (2023). arXiv:2306.07172

Y.-E. Keta, R. Mandal, P. Sollich, R. L. Jack, and L. Berthier, "Intermittent relaxation and avalanches in extremely persistent active matter", *Soft Matter* **19**, 3871–3883 (2023) [DOI:10.1039/D3SM00034F]. arXiv:2212.09836

Y.-E. Keta, R. L. Jack, and L. Berthier, "Disordered collective motion in dense assemblies of persistent particles", *Physical Review Letters* **129**, 048002 (2022) [DOI:10.1103/PhysRevLett.129.048002]. arXiv:2201.04902

Y.-E. Keta, É. Fodor, F. van Wijland, M. E. Cates, and R. L. Jack, "Collective motion in large deviations of active particles", *Physical Review E* **103**, 022603 (2021) [DOI:10.1103/PhysRevE.103.022603]. arXiv:2009.07112

Y.-E. Keta and P. Olsson, "Translational and rotational velocities in shear-driven jamming of ellipsoidal particles", *Physical Review E* **102**, 052905 (2020) [DOI:10.1103/PhysRevE.102.052905]. arXiv:2006.05305

T. Marschall, Y.-E. Keta, P. Olsson, and S. Teitel, "Orientational Ordering in Athermally Sheared, Aspherical, Frictionless Particles", *Physical Review Letters* **122**, 188002 (2019) [DOI:10.1103/PhysRevLett.122.188002]. arXiv:1806.01739

Y.-E. Keta and J. Rottler, "Cooperative motion and shear strain correlations in dense 2D systems of self-propelled soft disks", *EPL* **125**, 58004 (2019) [DOI:10.1209/0295-5075/125/58004].

Conferences

Dec 2022 **Active days EUTOPIA, Challenges in Active Matter**
CY Cergy Paris University
Contributed talk, "Disordered collective motion in dense and *very* persistent active matter".

Nov 2022 **GDR IDE "Interaction, Disorder, Elasticity"**
Université Grenoble Alpes
Contributed talk, "Intermittent active dynamics at infinite persistence".

Jun 2022 **Active & Intelligent Living Matter Conference**
Erice, Sicily
Poster.

Jun 2022 **Beg Rohu Summer School 2022**
Quiberon, Brittany
"Out of Equilibrium Dynamics". Summer school. Poster.

Feb 2022 **Edwards Centre for Soft Matter Mini-Conference**
University of Cambridge
Contributed talk, "Disordered collective motion in dense assemblies of persistent particles".

Oct 2021 **UCA Fall program on Complex Systems 2021**
Université de Nice
"Mobility, self-organization and swimming strategies". Summer school.

Mar 2021 **APS March Meeting**
Online
Contributed talk, "Collective motion in large deviation of active particles".

Refereeing

2022 **Nature Communications**

2022 **Scientific Reports**

2022 **Physical Review E**

2022 **SciPost**

Teaching

2022 **Physics for life sciences (undergraduates)**
Université de Montpellier

2022 **Python for sciences (undergraduates)**
Université de Montpellier

2018-2019 **Oral interrogator (Physics, Chemistry, Mathematics)**
2016-2017 Lycée du Parc, Institution des Chartreux, Lycée La Martinière Diderot (Lyon)

2015 **Volunteer tutor (Physics, Chemistry, Mathematics)**
- 2017 ENSeigner association, École normale supérieure de Lyon