

Curriculum Vitae

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Institute of
Environmental Engineering
Stefano-Franscini-Platz 5, HIL G37.2
ETH Zürich

Employment

Junior Group Leader, Institute of Environmental Engineering, ETH Zürich 09/2021 – present
Mentors: Prof. Roman Stocker and Prof. Sebastian Bonhoeffer

Postdoctoral Fellow, Institute of Environmental Engineering, ETH Zürich 09/2018 – 08/2021
Mentor: Prof. Roman Stocker

Education

PhD in Physical Applied Mathematics, Massachusetts Institute of Technology, USA 09/2013 – 06/2018
Advisor: Prof. Jörn Dunkel

Master of Advanced Study in Mathematics (Part III), University of Cambridge, UK 09/2012 – 06/2013
Awarded Distinction

Master of Physics, University of Oxford, UK 09/2008 – 06/2012
Awarded First Class Degree

Awards & Honors

SNF Ambizione Grant, 09/2021 – 08/2025

ETH Postdoctoral Fellowship, 09/2018 – 08/2020

Johnson Prize for a research paper, MIT Mathematics, 2018

Housman Award for Excellence in Teaching, MIT Mathematics, 2017

MIT Presidential Fellowship, 09/2013 – 06/2014

Dr. J. A. J. Whelan Prize in Mathematics, Christ's College, University of Cambridge, 2013

The Gibbs Prize for the best use of experimental apparatus in a MPhys Project, University of Oxford, 2012

Mansfield College Scholarship for excellent exam results, University of Oxford, 09/2009 – 06/2012

UK EPSRC summer project (with Prof. Amalia Coldea), 07/2011 – 08/2011

Publications (* joint first authors, if more than one)

1. G. Savorana, [J. Słomka](#), R. Stocker, R. Rusconi and E. Secchi, A microfluidic platform for characterizing the structure and rheology of biofilm streamers, *Soft Matter*, 2022
2. J.-D. Courcol, C. F. Invernizzi, Z. C. Landry, M. Minisini et al., ARC: An open web-platform for request/supply matching for a prioritized and controlled Covid-19 response, *Front. Public Health*, 9: 607677, 2021
3. [J. Słomka](#) and R. Stocker, Bursts characterize coagulation of rods in a quiescent fluid, *Phys. Rev. Lett.*, 124: 258001, 2020
4. [J. Słomka](#), U. Alcolombri, E. Secchi, R. Stocker and V. I. Fernandez, Encounter rates between bacteria and sinking particles, *New J. Phys.*, 22: 043016, 2020
5. [J. Słomka](#) and R. Stocker, On the collision of rods in a quiescent fluid, *Proc. Natl. Acad. Sci. U.S.A.*, 117: 3372-3374, 2020
6. [J. Słomka](#), A. Townsend and J. Dunkel, Stokes' second problem and reduction of inertia in active fluids, *Phys. Rev. Fluids*, 3: 103304, 2018

7. J. Słomka, P. Suwara and J. Dunkel, The nature of triad interactions in active turbulence, *J. Fluid Mech.*, 841: 701–731, 2018
8. O. Mickelin*, J. Słomka*, K. J. Burns, D. Lecoanet, G. M. Vasil, L. M. Faria and J. Dunkel, Anomalous chained turbulence in actively driven flows on spheres, *Phys. Rev. Lett.*, 120: 164503, 2018
9. J. Słomka and J. Dunkel, Spontaneous mirror-symmetry breaking induces inverse energy cascade in 3D active fluids, *Proc. Natl. Acad. Sci. U.S.A.*, 114: 2119-2124, 2017
10. J. Słomka and J. Dunkel, Geometry-dependent viscosity reduction in sheared active fluids, *Phys. Rev. Fluids*, 2: 043102, 2017
11. J. Słomka and J. Dunkel, Generalized Navier-Stokes equations for active suspensions, *Eur. Phys. J. Spec. Top.*, 224: 1349-1358, 2015

Invited talks:

18th International Symposium on Microbial Ecology, Lausanne (Switzerland), August 2022
 Microbial ecology for engineering biology, Theo Murphy scientific meeting, Oxfordshire (UK), March 2022
 Principles of Microbial Ecosystems Collaborative, Annual Meeting (online), September 2021
 Frontiers in Computational Methods for Active Matter, EPFL CECAM, Lausanne (Switzerland), February 2020
 Soft Matter and Statistical Physics Seminar, Warsaw University, Warsaw (Poland), January 2020
 Colloquium, Center for Theoretical Physics, Polish Academy of Sciences, Warsaw (Poland), January 2020
 Max Planck Institute for Dynamics and Self-Organization, Göttingen (Germany), December 2018
 Physics of Living Systems, MIT, Cambridge (USA), March 2018
 Prakash Lab, Stanford University, Stanford (USA), December 2017
 Widely Applied Mathematics Seminar, Harvard University, Cambridge (USA), December 2017
 Biophysical Modeling Group, Flatiron Institute, New York (USA), October 2017

Contributed conference & seminar talks:

Microscale Ocean Biophysics 6.0, Mallorca (Spain), May 2022
 APS March Meeting, online (USA), March 2022
 NCCR Microbiomes Workshop, online (Switzerland), April 2021
 APS March Meeting, online (USA), March 2021
 Batchelor Centenary Event, Cambridge (UK), March 2020 (cancelled due to Covid19)
 American Physical Society (APS) March Meeting, Boston (USA), March 2019
 APS March Meeting, Los Angeles (USA), March 2018
 APS Division of Fluid Dynamics Meeting (DFD), Denver (USA), November 2017
 Brown/Boston University Dynamics & PDE Seminar, Brown University (USA), April 2017
 APS March Meeting, New Orleans (USA), March 2017
 APS DFD Meeting, Portland (USA), November 2016
 APS March Meeting, Baltimore (USA), March 2016

Posters:

NCCR Microbiomes Annual Meeting, online (Switzerland), June 2021
 Principles of Microbial Ecosystems Collaborative, virtual meeting, September 2020
 Fluid Physics of Life, Dresden (Germany), October 2019
 Marine Particles and Phycospheres, Ascona (Switzerland), May 2019

Microscale Ocean Biophysics, Whistler (Canada), January 2019
Complex Motion in Fluids, University of Cambridge (UK), September 2017
DFG International Conference on Microswimmers, Bonn (Germany), October 2016

Workshops

ENSA Mental Health First Aid course, online (Switzerland), February 2022
Topology in Complex Fluids, Leiden (The Netherlands), May 2018

Teaching

Bachelor student supervision, ETH, Spring 2020
Computational Science And Engineering I (Lecturer), MIT, Summer 2016
Differential equations (Teaching Assistant), MIT, Fall and Spring 2016, Fall 2017

Service

Lead moderator on the ARC platform: An open web-platform for request/supply matching for a prioritized and controlled COVID-19 response in Switzerland
Initiator and organizer of 'LiMMat' – the Living Matter Seminar Series, Stocker Lab
Reviewer for peer-review journals (*Phys. Rev. Lett.*, *Proc. Natl. Acad. Sci. U.S.A.*, *Nat. Comm.*, *J. Fluid Mech.*, *Phys. Rev. Fluids*)