Albane Théry

PhD student in Physics and Applied Mathematics, DAMTP,
University of Cambridge, United Kingdom

at830@cam.ac.uk
http://www.damtp.cam.ac.uk/user/at830/

EDUCATION

2018-2022: PhD in Applied Mathematics, University of Cambridge – UK, supervised by Eric Lauga
Patterns in confined suspensions of microorganisms driven by external cues.
My main PhD work was building hydrodynamic models for the dynamics of magnetotactic bacteria suspensions confined in different geometries. I showed that orientation cues give rise to new patterns, with swimmer chirality and gravity as possible sources for additional symmetry-breaking.

2014-2017: MS in Physics, ENS Paris – Paris, France
ICFP Master's degree in Biological Physics and Soft Matter

2014-2017: Ingénieur, École polytechnique – Paris, France
Master's degree in Mechanics, with courses in Mathematics, Physics, Biology and Mechanics

2012-2014: Lycée Louis-Le-Grand – Paris, France
Undergraduate, Mathematics, preparation for 'Grandes Écoles' competitive entrance examination

RESEARCH EXPERIENCE

2018 July-August: Physics & Astronomy department, McMaster University – Hamilton, ON, Canada
Observed and quantified collective dynamics of magnetotactic bacteria confined in a channel, supervised by Kari Dalnoki-Veress

2018 March-June: MMN lab, Institut Pierre-Gilles de Gennes – Paris, France
Measured and modelled analytically the deformation of elongated droplets above a mechanical confinement gradient in a microfluidic channel, supervised by Marie-Caroline Jullien

2017 March-June : DAMTP, University of Cambridge – United Kingdom
Numerical and theoretical model of the stochastic motion of a sphere propelled by attached bacteria, surpervised by Eric Lauga

PUBLICATIONS

Hydrodynamic interactions of squirmers above a wall, A. Théry, E. Lauga, in preparation

Rebound and scattering of motile *Chlamydomonas* algae in confined chambers, A. Théry, Y. Wang, M. Dvoriashyna, C. Eloy, F. Elias and E. Lauga, *Soft Matter*, 2021

Self-organisation and convection of confined magnetotactic bacteria, A. Théry, L. Le Nagard, J.C. Ono-dit-Biot, C. Fradin, K Dalnoki-Veress, E Lauga, *Scientific Reports*, 2020

A stochastic model for bacteria-driven microswimmers, C.E. López, A. Théry, E. Lauga, *Soft Matter,* 2019

SELECTED TALKS

Sep 2021	UK Fluid Conference (online), Hydrodynamic interactions of sedimenting squirmers
Nov 2020	DFD meeting (online), *Chlamydomonas* scattering in foam

Nov 2019	DFD meeting (Seattle, US), Bacterial magneto-convection
July 2019	BIFD international symposium (Limerick, Ireland), Bacterial magneto-convection

SKILLS

Languages: English (TOEFL 117/120), French (native), Italian (conversational), Spanish (elementary)

Computing: MATLAB, COMSOL

TEACHING

2018-20 and 21-22:	Fluids Part II, (year 3), supervisions (small group tutoring), Cambridge
2019-2021:	Mathematical Biology Part II (year 3), supervisions, University of Cambridge
2017-2018:	Maths and Physics tutoring, 1st year undergraduate, Paris France

REFEREES

Eric Lauga
(PhD supervisor)
Professor in Applied Mathematics, DAMTP, University of Cambridge
e.lauga (at) damtp.cam.ac.uk

Kari Dalnoki-Veress
(supervisor, collaborator)
Professor, Dept of Physics & Astronomy, McMaster University, Canada
kdalnokiveress (at) gmail.com

Florence Elias
(collaborator)
Professor at Université Paris Diderot, MSC lab, France
florence.elias (at) univ-paris-diderot.fr