

Curriculum Vitae

Laure PÉDÈCHES

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Nationality : French.

Date and place of birth : April 7th 1991, Toulouse (France).



Academic background

- Since september 2017 : Attachée Temporaire d'Enseignement et de Recherche (Post Doc Position) at the *Institut National des Sciences Appliquées de Toulouse* ;
- September 2014 - August 2017 : PhD student in a cotutelle agreement between the ***Institut für Mathematik der Universität Potsdam*** and the *Institut de Mathématiques de Toulouse*, under the joint supervision of Sylvie Roelly and Patrick Cattiaux, on the subject *Stochastic models for collective motions of populations*. Defence on July 11th, 2017 in Toulouse ;
- 2011-2012 and 2013-2014 : Master Mathematics for Life Sciences co-habited by the *Ecole Polytechnique*, the *Ecole Nationale Supérieure de Cachan* and the University Paris XI. *Magistère de Mathématiques*, University Paris XI ;
- April-July 2014 : Master thesis under the supervision of Patrick Cattiaux, Institut de Mathématiques de Toulouse. Title : "Etude de modèles stochastiques de Cucker-Smale" ;
- 2012-2013 : *Agrégation externe* of Mathematics (national ranking : 69th) ;
- 2010-2011 : Bachelor Fundamental and Applied Mathematics, University Paris XI ;
- 2008-2010 : *Classes Préparatoires aux Grandes Ecoles*, *Lycée Pierre de Fermat*, Toulouse (France) ;
- 2008 : *Baccalauréat* S-SVT, speciality Mathematics, *Lycée Pardailhan*, Auch (France).

Linguistic skills

- French : mother tongue ;

- English : fluent (TOEIC : 990 in 2016 ; B2 level certificate in 2012) ;
- Spanish : good knowledge ;
- German : basics.

IT skills

- Programming in Maple, Matlab, R and Python ;
- Certification C2I2E obtained in April 2012 (professional use of IT tools for teaching and learning) ;
- Redaction of scientific documents with LaTeX ;
- Basics in html and CSS ;
- Creation and management of websites.

Publications

- L. Pédèches. *Asymptotic properties of various stochastic Cucker-Smale dynamics*. To appear in *Discrete and Continuous Dynamical Systems* (2018), available at http://www.math.uni-potsdam.de/fileadmin/user_upload/Prof-Wahr/Pedeches/DCDS_2018.pdf.
- P. Cattiaux, F. Delebecque, L. Pédèches. *Stochastic Cucker-Smale models : old and new*. To appear in *Annals of Applied Probability* (2018)), available at http://www.math.uni-potsdam.de/fileadmin/user_upload/Prof-Wahr/Pedeches/AAP_2018.pdf.
- L. Pédèches. *Exponential ergodicity for a class of non-Markovian stochastic processes*. Preprint, 2017, available at http://www.math.uni-potsdam.de/fileadmin/user_upload/Prof-Wahr/Pedeches/BJPS.pdf.
- P. Cattiaux, L. Pédèches. *The 2-D stochastic Keller-Segel particle model : existence and uniqueness*. ALEA, Lat. Am. J. Probab. Math. Stat. 13 (1) : 447–463, 2016, available at http://www.math.uni-potsdam.de/fileadmin/user_upload/Prof-Wahr/Pedeches/ALEA_2016.pdf.

Talks

- *Various models around the Cucker-Smale model and their flocking results*, joint talk with Fanny Delebecque during the International Workshop *Stochastic processes and statistical machine learning I* organized by the French-German doctoral college, Potsdam, February 15th 2018.
- *From cranes to wildebeests : modelling flocking*, Workshop *Random models with applications in the natural sciences*, Universidad de los Andes, Bogotá, December 12th 2017.
- *About some stochastic particle dynamics*, Probability Seminar, University of Potsdam, June 23rd 2017.

- *Flocking for stochastic variations of the Cucker-Smale model*, Workshop *Interactions EDP/probabilités : équations cinétiques, temps long et propagation du chaos*, CIRM, Marseille, April 19th 2017.
- *Modélisation stochastique de mouvements collectifs de population : quelques variations du modèle de Cucker-Smale*, Student Seminar of the *Institut de Mathématiques de Toulouse*, February 23rd 2017.
- *Behaviour of stochastic systems derived from Cucker-Smale model*, Probability Seminar, University of Potsdam, June 15th 2015.

Teaching experiences

- 2017-2018 : various courses (basics analysis, probability theory, statistics) for 1st to 3rd year students at the *Institut National des Sciences Appliquées de Toulouse* (192h per year) ;
- 2014-2017 : various courses (basic analysis and algebra, probability theory, statistics) for 1st to 3rd year students at the University Toulouse III (64h per year).

Other interests

- August 2016 : first aid training with the Red Cross in Toulouse ;
- 2014-2017 : volunteering to help young disadvantaged students with their homework and the *Restos du Coeur* (food aid, social help) ;
- Basketball : volunteering (coaching, communication) at club and regional levels.