

Paul Bastide

Postdoctoral researcher in Statistics

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Curent Position

2017 – present **Postdoctoral researcher, KU Leuven.**

Bayesian Phylogenetic Comparative Methods applied to virology. Supervised by **Philippe Lemey** (KU Leuven) and **Marc Suchard** (UCLA).

Keywords.

Phylogenetic Comparative Methods. Shift Detection on Trees. Model Selection. Trait Evolution on Phylogenetic Networks.

Educational Background

2014 – 2017 **PhD Thesis, Université Paris Sud.**

Shifted stochastic processes evolving on trees: application to models of adaptive evolution on phylogenies. Supervised by **Stéphane Robin** (MIA, UMR 518 AgroParisTech/INRA) and **Mahendra Mariadassou** (MaIAGE, UR 1404 INRA).

I was awarded the **Prix Marie-Jeanne Laurent-Duhamel 2018** by the French Statistical Society (SFdS) for this work in Applied Statistics.

Fall 2015 **Fulbright Scholar, University of Wisconsin - Madison.**

I was granted with a Fulbright fellowship to work with **Cécile Ané** at the Departments of Statistics and Botany. During my stay, I was working in the **Sytsma Lab**.

2013 – 2014 **Master2 MathSV, Université Paris Sud - École Polytechnique - ENS Cachan, Mathematics For Life Sciences.**

Master's degree, awarded with highest honors.

2010 – 2014 **Grande École, École Polytechnique.**

(One of France's leading schools of science and engineering.)

Majoring in Applied Mathematics, track : “Mathematics: Applications to Biology and Medical Science”.

Publications

2018 **P. Bastide**, C. Solís-Lemus, R. Kriebel, K. W. Sparks, and C. Ané. Phylogenetic comparative methods on phylogenetic networks with reticulations. *Systematic Biology*, In press, apr 2018.

P. Bastide, C. Ané, S. Robin, and M. Mariadassou. Inference of Adaptive Shifts for Multivariate Correlated Traits. *Systematic Biology*, In press, jan 2018.

2017 C. Solís-Lemus, **P. Bastide**, and C. Ané. PhyloNetworks: A Package for Phylogenetic Networks. *Molecular Biology and Evolution*, 34(12):3292–3298, dec 2017.

P. Bastide, M. Mariadassou, and S. Robin. Detection of adaptive shifts on phylogenies by using shifted stochastic processes on a tree. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 79(4):1067–1093, 2017.

2014 **P. Bastide** and T. David. Discours de réception d'Édouard Estaunié à l'Académie française : définitions croisées de la persona d'un académicien scientifique. *Épistémocritique*, 14(Greffes), 2014.

Softwares

PhylogeneticEM (Main Author) An R package for autoamtic shift detection on phylogenies. Available on the CRAN and on GitHub.

PhyloNetworks (Contributor) A Julia package for statistical inference, data manipulation and visualization of phylogenetic networks. Available on GitHub.

Talks and Posters in Conferences

- 30/05/2018 **JdS 2018**, 50ème Journées de Statistiques de la SFdS, Saclay, **invited speaker** for the Prix Marie-Jeanne Laurent-Duhamel.
- 13/06/2017 **MCEB 2017**, *Mathematical and Computation Evolutionary Biology*, Porquerolles, poster.
- 30/05/2017 **JdS 2017**, 49èmes Journées de Statistique de la SFdS, Avignon, contributed talk.
- 28/06/2016 **JOBIM 2016**, *Journées Ouvertes en Biologie, Informatique et Mathématiques*, Lyon, contributed talk.
- 19/04/2016 **JPS 2016**, *Colloque Jeunes Probabilistes et Statisticiens*, École de Physique des Houches, talk.
- 22/06/2015 **MCEB 2015**, Porquerolles, poster.
- 02/06/2015 **JdS 2015**, 47èmes Journées de Statistique de la SFdS, Lille, contributed talk.

Seminars and Workshops

- 15/02/2018 **Meeting of the group "Modélisation Mathématique et Biodiversité"**, *Institut de Mathématique d'Orsay*.
- 20/11/2017 **Joint Seminar: "Mathématiques, Évolution, Biologie" and Statistics**, *Institut de Mathématiques de Marseilles*.
- 08/11/2017 **Bioinformatic Seminar (BIG)**, *KU Leuven*.
- 23/02/2017 **Bioinformatics Team Meeting**, *INRA, Jouy-en-Josas*.
- 14/11/2016 **StatInfOmics Team Meeting**, *MaIAGE, Jouy-en-Josas*.
- 04/10/2016 **Journées des maths-info de l'INRA**, *Mallemort*.
- 27/06/2016 **AgroParisTech Seminar**, *Paris*.
- 23/06/2016 **Université Paris Sud Statistics Seminar (PhD Session)**, *Orsay*.
- 09/06/2016 **Université Paris Descartes PhD Seminar**, *Paris*.
- 23/06/2016 **EDMH PhD Seminar**, *Paris*.
- 23/06/2016 **SupAgro Seminar**, *Montpellier*.
- 10/02/2016 **Sauquet Lab Seminar**, *Université Paris Sud - Orsay*.
- 19/11/2015 **Sytsma Lab Seminar**, *University of Wisconsin - Madison*.
- 18/11/2015 **University of Wisconsin Statistics Seminar**, *Madison*.
- 22/07/2015 **Morlon Lab Seminar**, *IBENS, Paris*.
- 23/06/2016 **SSB Seminar**, *Jouy-en-Josas*.
- 16/02/2015 **MaAIGE Internal Seminar**, *Jouy-en-Josas*.

Teaching

- 2014 – 2017 **Teaching Assistant**, *Université Paris Sud*, (details below).
- Springs Introduction to Mathematical Modeling. Third year Bsc students in Applied Mathematics (L3).
- 2015/16/17 (L3).
- Fall 2016 Introduction to Statistics. Second year Bsc students majoring in Biology (L2).
- Fall 2016 Mathematics for Biology. First year Bsc students majoring in Biology (L1).
- Spring 2016 Measure Theory and Probabilities. Third year Bsc students in Mathematics (L3).
- Fall 2014 Introduction to Statistics. Third year Bsc students majoring in Biology (L3).

2011 – 2012 **Tutor**, *GEPPM*.

A national program to help underprivileged high school students to continue their studies after high school. One course a week.

Scientific Projects and Internships

Spring 2014 **Internship**, UMR 518 AgroParisTech / INRA (Paris), Supervised by Stéphane Robin and Mahendra Mariadassou, *Shifted Phylogenetic Comparative Methods*.

2013 – 2014 **Project**, UMR de Génétique Végétale du Moulon (Saclay), Supervised by Christine Dillmann and Sylvie Huet, *Analysis of the relations between the phenotype and the genotype on yeast organisms, combining genomic, proteomic and metabolic data*.

Spring 2013 **Internship**, International Institute for Climate and Society (IRI) at Columbia University (New York), Supervised by Rémi Cousin and Daniel Ruiz Carrascal, *Construction and Study of a Multi-Model Framework For Short Term Predictions of a Malaria Epidemic in the Region of Kericho, Kenya*.

Fall 2012 **Project**, CMAP (École Polytechnique), Supervised by Stéphane Gaubert, *How to control the Chikungunya epidemic in La Réunion*.

2011 – 2012 **Project**, CMAP (École Polytechnique), Supervised by Amandine Veber, *Modeling the development of terrorists groups*.

Work Experience

Summer 2012 **Internship**, Intech-NSK, Novosibirsk (Russia).

2010 – 2011 **Internship**, *l'Enfant @ l'Hôpital*, French association.

Skills

French	First language	Russian	Notions
English	Spoken and written	Spanish	Notions
Desktop tools	MS Office, LaTeX, Git	Programing	R, Rcpp, Julia, Matlab