

Gilles Stupfler

PhD in Applied Mathematics

Lecturer, ENSAI Rennes & CREST

Personal information

Date and place of birth: 15th May 1988, Strasbourg, France
Citizenship: French
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Education

2016-2018 Postgraduate Certificate in Higher Education
University of Nottingham

2009-2011 PhD in Applied Mathematics
University of Strasbourg
Title: A hidden Markov model in insurance
and Frontier and endpoint estimation
Defended on November 10, 2011 at the University of Strasbourg
PhD advisors: Stéphane Girard and Armelle Guillou

2009 Agrégation de Mathématiques
Ranked 21st among all 252 candidates who got awarded the Agrégation

2007-2009 Master's degree in Pure and Applied Mathematics
University of Strasbourg
Dissertation title: Matrix methods for ruin probabilities
Advisor: Karl-Theodor Eisele
Ranked 1st among all 22 students

2007 Bachelor's degree in Pure and Applied Mathematics
University of Strasbourg
Ranked 1st among all 162 students

Employment

Sept. 2019-present	Lecturer ENSAI Rennes CREST (Statistics group)
Sept. 2016-Sept. 2019	Assistant Professor of Statistics University of Nottingham School of Mathematical Sciences
Sept. 2012-Aug. 2016	Assistant Professor Aix-Marseille Université Department of Economics
Sept. 2012-Aug. 2016	Oral examiner in “Classes préparatoires” Lycée Vauvenargues, Aix-en-Provence
Sept. 2010-Aug. 2012	Oral examiner in “Classes préparatoires” Lycée Kléber, Strasbourg
Sept. 2009-Aug. 2012	Research and Teaching Assistant Team “Statistique” at the IRMA, University of Strasbourg

Teaching experience

As a Lecturer at ENSAI (2019-present)

Courses taught:

- **Probability lectures, Autumn semester, third-year undergraduate students in Mathematics with Economics (Autumn 2019-present, one semester total)**
Content: Random variables: distribution function, density function, classical inequalities, characteristic function, quantiles. Random vectors: distribution function, density function, independence criterion, covariance/correlation matrix, Gaussian random vectors. Conditional expectation, to an event, a random variable or a σ -algebra. Convergences: in distribution, in probability, almost surely, law of large numbers and central limit theorem.
- **Advanced Regression Models lectures and tutorials, Spring semester, first-year postgraduate students in Statistics (Spring 2020, one semester total)**
Content: Local polynomial regression: statistical properties, tuning parameters, curse of dimensionality. Partially linear models: identifiability, some estimators, statistical properties, implementation. Single-index models: identifiability, some estimators, statistical properties, implementation. Real data examples.

As an Assistant Professor at the University of Nottingham (2016-2019)

Courses taught:

- **Statistical Models and Methods tutorials, Autumn semester, second-year undergraduate students in Mathematics (Autumn 2016 and Autumn 2017, two semesters total)**
Content: expectation and variance, discrete and continuous models, maximum likelihood estimation, Neyman-Pearson lemma, likelihood ratio, classical tests.
- **Probability Models and Methods tutorials, Autumn semester, second-year undergraduate students in Mathematics (Autumn 2016, one semester total)**
Content: joint distribution of random pairs, marginal and conditional distribution, change of variables, moment/probability generating function, multivariate Gaussian distribution.
- **Statistical Inference lectures and tutorials, Autumn semester, third-year undergraduate students in Mathematics and postgraduate students in Statistics (Autumn 2016-Autumn 2019, three semesters total)**
Content: Frequentist statistics: basic concepts, maximum likelihood estimation and its asymptotic properties, delta-method, hypothesis testing. Bayesian statistics: prior/posterior distribution, conjugate priors, predictive inference, model comparison, the case of categorical and normal data. Introduction to decision theory: Bayes decision rule, Bayes risk, admissibility of Bayes rules.
- **Data Analysis and Modelling/Vocational Mathematics/Vocational Financial Mathematics workshops, full-year module, third-year undergraduate students and postgraduate students in Mathematics (Autumn 2017-Autumn 2019, two years total)**
Content: Project modules involving the application of mathematics to a number of practical, open-ended problems, close to those that mathematics graduates would encounter in industry.

As part of my teaching duties, I also tutored small groups of typically 4 to 6 first-year students during a one-hour session each week during term time. Topics include foundations of mathematics, calculus, and basic linear algebra. Finally, I supervised two year-long undergraduate dissertations per year and two summer-long postgraduate dissertations per year, on topics including the extreme value analysis of financial data, nonparametric regression, ruin theory and hidden Markov models.

I have also had the opportunity to engage in outreach, with the Nottingham Potential Summer School, for which I organised activities around random walks for Year 12 students (16-17 years old).

As an Assistant Professor at Aix-Marseille Université (2012-2016)

Courses taught:

- **Mathematics 1 lectures and tutorials, first semester of the BSc in Economics and Management (Autumn 2012-Autumn 2015, four semesters total)**
Content: continuity, differentiability, second-order Taylor expansion, univariate/bivariate unconstrained/bivariate linearly constrained optimisation, examples in economics: maximising the utility function of a consumer, minimising the total operating cost of a firm.
- **Continuous Probability Models tutorials, third semester of the BSc in Mathematics Applied to Social Sciences (Autumn 2012-Autumn 2014, three semesters total)**
Content: classical continuous distributions, change-of-variables formula, continuous random pairs, law of large numbers, central limit theorem.
- **Probability 2 lectures and tutorials, fourth semester of the BSc in Economics and Management (Spring 2013-Spring 2016, four semesters total)**
Content: classical discrete and continuous distributions. Random pairs: joint distribution, marginal distributions, conditional distributions, correlation structure, variance-covariance matrix, conditional expectation. Introduction to limit theory.
- **Basic Econometrics lectures and tutorials, fifth semester of the BSc in Mathematics Applied to Social Sciences (Autumn 2012-Autumn 2015, four semesters total)**
Content: ordinary least squares estimator, Student t-test for marginal significance, Fisher F-test for global significance, confidence intervals for i.i.d. Gaussian errors. Multicollinearity, heteroskedasticity, autocorrelation and their detection.
- **Mathematical Optimisation lectures and tutorials, fifth semester of the BSc in Economics and Management (Autumn 2013-Autumn 2015, three semesters total, last semester taught using flipped learning)**
Content: constrained optimisation in $\mathbb{R}^n$: KKT conditions for equality/inequality/mixed constraints, sufficiency of these conditions (convex problems, Slater condition), Lagrange multipliers and shadow price, simple envelope theorems.
- **Statistics lectures and tutorials, first semester of the three-year Magistère of the Aix-Marseille School of Economics programme (Autumn 2015, one semester total)**
Content: estimator/estimate, measuring the quality of an estimator, limit theory, empirical estimators, maximum likelihood estimators. Examples of testing procedures: comparing two proportions, testing the value of the mean for a Gaussian sample, Welch's t-test, likelihood ratio test.
- **Sampling for Rare Events lectures and practicals, graduate course in the MSc in Actuarial Mathematics (Spring 2016, one semester total)**
Content: failure of Monte-Carlo sampling for rare events, importance sampling, efficiency and logarithmic efficiency, application to the estimation of ruin probabilities for light-tailed losses using R.

As a PhD candidate at the University of Strasbourg (2009-2012)

Courses taught:

- **Probability and Statistics tutorials, third semester of the BSc in Mathematics and of the BSc in Mathematics and Economics (2009-2011, three semesters total)**

Content: basic combinatorics, conditional probability, discrete distributions, generating function, continuous distributions, characteristic function, simple applications of the law of large numbers and central limit theorem.

- **Probability and Statistics tutorials, sixth semester of the BSc in Mathematics (2011, one semester total)**

Content: basic inferential statistics, maximum likelihood estimation, law of large numbers, central limit theorem.

- **Mathematical Statistics tutorials, sixth semester of the BSc in Mathematics (2010-2011, three semesters total)**

Content: conditional expectation, Gaussian random vector, linear model. Inferential statistics: bias, mean squared error, Fisher information, minimum-variance unbiased estimator, exponential family.

As an oral examiner in Mathematics in “Classes préparatoires” (2010-2016)

I tutored groups of typically 3 first-year students enrolled in the French highly selective “Classes préparatoires” programme by the means of weekly, one-hour oral exams, for roughly four hours per week. The content of the Mathematics course there is approximately equivalent to that of all Mathematics courses combined in the first year of a BSc in Mathematics.

Research activities

Research interests

My main area of research is extreme value analysis. Much of my recent work in this direction has focused on how to measure and estimate extreme risk, particularly in actuarial and financial contexts.

I am also interested in:

- Semi- and non-parametric statistics, especially regression methods.
- M -estimation.
- Missing data frameworks.
- Hidden Markov models.

Published papers (most recent first)

Stupfler, G. (2019). On a relationship between randomly and non-randomly thresholded empirical average excesses for heavy tails, *Extremes* **22**(4): 749–769.

Daouia, A., Gijbels, I., Stupfler, G. (2019). Extremiles: A new perspective on asymmetric least squares, *Journal of the American Statistical Association* **114**(527): 1366–1381.

Falk, M., Stupfler, G. (2019). On a class of norms generated by nonnegative integrable distributions, *Dependence Modeling* **7**(1): 259–278.

Church, O., Derclaye, E., Stupfler, G. (2019). An empirical analysis of the design case law of the EU Member States, *International Review of Intellectual Property and Competition Law* **50**(6): 685–719.

Stupfler, G. (2019). On the study of extremes with dependent random right-censoring, *Extremes* **22**(1): 97–129.

Gardes, L., Stupfler, G. (2019). An integrated functional Weissman estimator for conditional extreme quantiles, *REVSTAT: Statistical Journal* **17**(1): 109–144.

Daouia, A., Girard, S., Stupfler, G. (2019). Extreme M -quantiles as risk measures: From L^1 to L^p optimization, *Bernoulli* **25**(1): 264–309.

El Methni, J., Stupfler, G. (2018). Improved estimators of extreme Wang distortion risk measures for very heavy-tailed distributions, *Econometrics and Statistics* **6**: 129–148.

Daouia, A., Girard, S., Stupfler, G. (2018). Estimation of tail risk based on extreme expectiles, *Journal of the Royal Statistical Society: Series B* **80**(2): 263–292.

Stupfler, G., Yang, F. (2018). Analyzing and predicting CAT bond premiums: a Financial Loss premium principle and extreme value modeling, *ASTIN Bulletin* **48**(1): 375–411.

El Methni, J., Stupfler, G. (2017). Extreme versions of Wang risk measures and their estimation for heavy-tailed distributions, *Statistica Sinica* **27**(2): 907–930.

Girard, S., Stupfler, G. (2017). Intriguing properties of extreme geometric quantiles, *REVSTAT: Statistical Journal* **15**(1): 107–139.

Falk, M., Stupfler, G. (2017). An offspring of multivariate extreme value theory: the max-characteristic function, *Journal of Multivariate Analysis* **154**: 85–95.

Stupfler, G. (2016). On the weak convergence of the kernel density estimator in the uniform topology, *Electronic Communications in Probability* **21**(17): 1–13.

Stupfler, G. (2016). Estimating the conditional extreme-value index under random right-censoring, *Journal of Multivariate Analysis* **144**: 1–24.

Girard, S., Stupfler, G. (2015). Extreme geometric quantiles in a multivariate regular variation framework, *Extremes* **18**(4): 629–663.

- Meintanis, S.G., Stupfler, G. (2015). Transformations to symmetry based on the probability weighted characteristic function, *Kybernetika* **51**(4): 571–587.
- Goegebeur, Y., Guillou, A., Stupfler, G. (2015). Uniform asymptotic properties of a nonparametric regression estimator of conditional tails, *Annales de l'Institut Henri Poincaré (B): Probability and Statistics* **51**(3): 1190–1213.
- Gardes, L., Stupfler, G. (2015). Estimating extreme quantiles under random truncation, *TEST* **24**(2): 207–227.
- Guillou, A., Loisel, S., Stupfler, G. (2015). Estimating the parameters of a seasonal Markov-modulated Poisson process, *Statistical Methodology* **26**: 103–123.
- Stupfler, G. (2014). On the weak convergence of kernel density estimators in L^p spaces, *Journal of Nonparametric Statistics* **26**(4): 721–735.
- Gardes, L., Stupfler, G. (2014). Estimation of the conditional tail index using a smoothed local Hill estimator, *Extremes* **17**(1): 45–75.
- Girard, S., Guillou, A., Stupfler, G. (2014). Uniform strong consistency of a frontier estimator using kernel regression on high order moments, *ESAIM: Probability and Statistics* **18**: 642–666.
- Stupfler, G. (2013). A moment estimator for the conditional extreme-value index, *Electronic Journal of Statistics* **7**: 2298–2343.
- Guillou, A., Loisel, S., Stupfler, G. (2013). Estimation of the parameters of a Markov-modulated loss process in insurance, *Insurance: Mathematics and Economics* **53**(2): 388–404.
- Girard, S., Guillou, A., Stupfler, G. (2013). Frontier estimation with kernel regression on high order moments, *Journal of Multivariate Analysis* **116**: 172–189.
- Girard, S., Guillou, A., Stupfler, G. (2012). Estimating an endpoint with high order moments in the Weibull domain of attraction, *Statistics and Probability Letters* **82**(12): 2136–2144.
- Girard, S., Guillou, A., Stupfler, G. (2012). Estimating an endpoint with high-order moments, *TEST* **21**(4): 697–729.

Accepted papers

- Falk, M., Stupfler, G. (2019). The min-characteristic function: characterizing distributions by their min-linear projections, to appear in *Sankhya*.
- Gardes, L., Girard, S., Stupfler, G. (2019). Beyond tail median and conditional tail expectation: extreme risk estimation using tail L^p -optimisation, to appear in *Scandinavian Journal of Statistics*.
- Daouia, A., Girard, S., Stupfler, G. (2019). Tail expectile process and risk assessment, to appear in *Bernoulli*.

Preprints (submitted or under revision)

- Girard, S., Stupfler, G., Usseglio-Carleve, A. (2019). An L^p -quantile methodology for tail index estimation.
- Girard, S., Stupfler, G., Usseglio-Carleve, A. (2019). Nonparametric extreme conditional expectile estimation.
- Daouia, A., Gijbels, I., Stupfler, G. (2018). Extremile regression.
- Mitchell, E.G., Crout, N.M.J., Wilson, P., Wood, A.T.A., Stupfler, G. (2018). Operating at the extreme: estimating the upper yield boundary of winter wheat production in commercial practice.
- Daouia, A., Girard, S., Stupfler, G. (2018). ExpectHill estimation, extreme risk and heavy tails.
- Neves, C., Stupfler, G. (2018). Testing the fundamental hypothesis of randomly right-censored extremes.

Conference talks (most recent first)

Daouia, A., Gijbels, I., Stupfler, G. (2019). Extremiles: A new perspective on asymmetric least squares. In *32nd European Meeting of Statisticians*, Palermo, Italy.

Stupfler, G. (2019). On a relationship between randomly and non-randomly thresholded empirical average excesses for heavy tails. In *2nd Workshop on Multivariate Data and Software*, Limassol, Cyprus (**invited talk**).

Girard, S., Stupfler, G. (2018). Estimation of high-dimensional extreme conditional expectiles. In *11th International Conference of the ERCIM WG on Computational and Methodological Statistics*, Pisa, Italy (**invited talk**).

Daouia, A., Gijbels, I., Girard, S., Stupfler, G. (2018). Asymmetric least squares techniques for extreme risk estimation. In *Recent advances in the statistical analysis of extreme environmental and actuarial risk*, Nottingham, UK (**invited talk**).

Girard, S., Stupfler, G. (2017). Some negative results on extreme multivariate quantiles defined through convex optimisation. In *10th International Conference of the ERCIM WG on Computational and Methodological Statistics*, London, UK (**invited talk**).

Girard, S., Guillou, A., Stupfler, G. (2017). Estimating a frontier function using a high-order moments method. In *31st European Meeting of Statisticians*, Helsinki, Finland (**invited talk**).

Neves, C., Stupfler, G. (2016). Assessing the validity of certain hypotheses in randomly right-censored extremes. In *9th International Conference of the ERCIM WG on Computational and Methodological Statistics*, Seville, Spain (**invited talk**).

Stupfler, G. (2016). On the weak convergence of the kernel density estimator in functional spaces. In *3rd Conference of the International Society for Non-Parametric Statistics*, Avignon, France (**invited talk**).

El Methni, J., Stupfler, G. (2016). Extreme versions of Wang risk measures and their estimation for heavy-tailed distributions. In *Workshop on Extremes, Copulas and Actuarial Science*, Luminy, France (**invited talk**).

El Methni, J., Stupfler, G. (2015). Extreme versions of Wang risk measures and their estimation for heavy-tailed distributions. In *8th International Conference of the ERCIM WG on Computational and Methodological Statistics*, London, UK (**invited talk**).

Girard, S., Stupfler, G. (2015). Some intriguing properties of extreme geometric quantiles. In *9th Conference on Extreme Value Analysis, Probabilistic and Statistical Models and their Applications*, Ann Arbor, Michigan, USA (**invited talk**).

Gardes, L., Stupfler, G. (2014). Estimating extreme quantiles under random truncation. In *8th International Conference on Computational and Financial Econometrics*, Pisa, Italy (**invited talk**).

Girard, S., Stupfler, G. (2014). On the asymptotic behaviour of extreme geometric quantiles. In *Workshop on Extreme Value Theory, with an emphasis on spatial and temporal aspects*, Besançon, France (**invited talk**).

Stupfler, G. (2014). Un estimateur des moments pour l'indice des valeurs extrêmes conditionnel. In *46èmes Journées de Statistique*, Rennes, France.

Gardes, L., Stupfler, G. (2013). Estimation of the conditional tail index using a smoothed local Hill estimator. In *10èmes Journées de Statistique de Rennes*, Rennes, France (**invited talk**).

Gardes, L., Stupfler, G. (2013). Estimation de l'indice des valeurs extrêmes conditionnel par un estimateur de Hill local lissé. In *45èmes Journées de Statistique*, Toulouse, France.

Girard, S., Guillou, A., Stupfler, G. (2012). Estimation de point terminal dans le domaine d'attraction de Weibull par une méthode des moments d'ordre élevé. In *44èmes Journées de Statistique*, Brussels, Belgium.

Girard, S., Guillou, A., Stupfler, G. (2011). Estimating an endpoint using high order moments. In

7th Conference on Extreme Value Analysis, Probabilistic and Statistical Models and their Applications, Lyon, France.

Invited seminars

2020: Université de Bretagne Sud, University of Grenoble, Bocconi University and ENSAI Rennes.
2019: University of Cardiff, Ecole Polytechnique, ENSAI Rennes (twice) and Université Libre de Bruxelles.
2018: Ecole Polytechnique Fédérale de Lausanne.
2017: KU Leuven, University of Newcastle, University of Nottingham and University of Reading.
2016: Aix-Marseille Université, University of Nottingham and University Paris Descartes.
2015: University of Aveiro, University Paris Descartes and Toulouse School of Economics.
2014: University of Strasbourg.
2013: Aix-Marseille Université and University of Grenoble.
2012: University of Grenoble, University of Lyon I, University of Montpellier, University of Nancy, INSA Toulouse and Toulouse School of Economics.
2011: University of Strasbourg (twice) and ISFA Lyon.

Academic visits

April 2019: One week at *Bocconi University (Milan)*. I worked with Simone Padoan on the estimation of extreme expectiles in multidimensional financial portfolios. This visit was sponsored by a University of Nottingham internal grant (amount awarded **£2,000**).

March and May 2018: Two weeks at the *Toulouse School of Economics* and one week at *KU Leuven*. I worked with Abdelaati Daouia and Irène Gijbels on extreme value analysis using extremiles in regression and time-dependent contexts. This visit was sponsored by a University of Nottingham internal grant (amount awarded **£2,000**).

January 2015: One week at the *University of Aveiro (Portugal)*. I worked with Cláudia Neves on a testing procedure for checking the fundamental hypothesis in the field of censored extremes. This visit was sponsored by project DEXTE, coordinated by Cláudia Neves and financed by the Portuguese Foundation of Science and Technology (amount awarded **€34,000**).

Supervision activities

- PhD supervision:
 - Emily Mitchell (October 2016-present, joint supervisors: Neil Crout, Paul Wilson and Andrew Wood). *Statistical analysis of agricultural soils climate data to aid food security under environmental change*. Project selected for a poster presentation at the House of Commons during the STEM for Britain 2018 event.
 - Abdul Haris Jameel (October 2019-present, joint supervisors: Chris Brignell, Chris Fallaize and Joachim Grevel). *New analytical and simulation tools in clinical oncology*. PhD studentship financed by BAST Inc. Ltd (BAST, Loughborough, UK).
- Postdoctoral supervision: Antoine Usseglio-Carleve (October 2018-present, joint supervisor: Stéphane Girard). *Estimation of extreme risk measures with covariate information*.
- Informal PhD supervision: Hibiki Kaibuchi (October 2019-present, PhD student at SOKENDAI, Tokyo from April 2018, PhD supervisor: Yoshinori Kawasaki). *A bias-reduced GARCH-EVT approach for financial risk estimation*.
- Summer undergraduate internship supervision:

- 2016-2017: Daniel Brown (*Assessing and handling stochastic variability in the extremes of a data set*), on a 10-week EPSRC-funded internship.
- 2017-2018: Jay Chawda (*Estimating extreme conditional quantiles with big data*), on an 8-week LMS-funded internship, and Oliver Church (*An empirical analysis of the effect of case law on the creation of designs*), on a 10-week internship funded with an internal grant.
- 2018-2019: Qianlu Zhou (*Extreme quantile estimation with dependent censoring*), on a 8-week LMS-funded internship.

Funding/Grants

July 2019: *French ANR grant*, “ExtremReg: Extremal Regression with applications to econometrics, environment and finance”. Collaborative grant consisting of funding for a PhD studentship, conference organisation, travel expenses and consumables (**€159,000**)

April 2019: *LMS Undergraduate Research Bursary*, “Extreme quantile estimation with dependent censoring”. Funding of a 8-week undergraduate summer internship (**£1,440**)

January 2019: Travel grant, *European COST Action CRONoS - IC1408* (**€860**)

January 2019: *Visitors Fund internal grant* for a 1-week visit of Antoine Usseglio-Carleve to the University of Nottingham (**£320**)

December 2018: *RPA Sandpit Fund internal grant*, “Spiders in Space: Modelling the dispersal of spiders for biocontrol”. With Jennifer Gaskell, Markus Owen, Jonathan Wattis (School of Mathematical Sciences, University of Nottingham), Sara Goodacre (School of Life Sciences, University of Nottingham) and Matthew Bell (School of Agriculture, University of Nottingham). Funding of two months of a research assistantship, a workshop and a summer internship (**£8,600**)

December 2018: *RPA Sandpit Fund internal grant*, “Predicting patient survival times from large-scale routine health records”. With Colin Crooks (School of Medicine, University of Nottingham) and Emily Mitchell. Funding of two months of Emily Mitchell’s time (**£5,772**)

December 2018: 4* *REF-PEF internal grant*, “Modelling and analysing multivariate risk using extreme expectiles”. Funding of a 1-week visit to Simone Padoan at Bocconi University in Milan, and of a 1-week visit made by Simone Padoan to Nottingham (**£2,000**)

November 2018: *Industrial PhD funding*, “New analytical and simulation tools in clinical oncology”. With Chris Brignell (School of Mathematical Sciences, University of Nottingham) and BAST Inc. Ltd. Funding of a 4-year PhD studentship, including equipment and travel costs, financed by BAST Inc. Ltd. (**£100,000**)

October 2018: Travel grant, *Strategy & Steering Conferences Fund*, University of Nottingham (**£650**)

May 2018: *LMS Undergraduate Research Bursary*, “Estimating extreme conditional quantiles with big data”. Funding of a 8-week undergraduate summer internship (**£1,440**)

March 2018: *NIA internal grant*, “Legislative impact of an empirical analysis of EU Member States case law on the creation of designs in the EU”. With Estelle Derclaye (School of Law, University of Nottingham). Funding of two short visits to the European Commission in Brussels to discuss implications of current research (**£2,000**)

December 2017: 4* *REF-PEF internal grant*, “Time-dynamic conditional extreme value analysis using extremiles”. Funding of a 1-week visit to Abdelaati Daouia at the Toulouse School of Economics, followed by a 1-week visit to Irène Gijbels at KU Leuven (**£2,000**)

December 2017: *LMS Celebrating New Appointments grant* for the organisation of the 1-day workshop “Recent advances in the statistical analysis of extreme environmental and actuarial risk” at the University of Nottingham (**£600**)

October 2017: *LMS Research in Pairs grant* for a 1-week visit of Professor Michael Falk to the University of Nottingham (**£810**)

June 2017: *RPA Development Fund internal grant*, “An empirical analysis of the effect of EU Member States case law on the creation of designs in the EU”. With Estelle Derclaye (School of Law, University of Nottingham). Short-term funding of 25 law research assistants and of a 10-week internship in data analysis (**£23,912**)

May 2017: *EPSRC Vacation bursary*, “Assessing and handling stochastic variability in the extremes of a data set”. Funding of a 10-week undergraduate summer internship (**£2,200**)

May 2017: *EPSRC CASE funding*, “Statistical analysis of risk, failure, and extreme event propagation in the airline industry using multi-level networks”. With Yves van Gennip (School of Mathematical Sciences, University of Nottingham) and Russell Group Ltd. Funding of a 4-year PhD studentship, including equipment and travel costs (**£81,852** from EPSRC, plus **£28,000** from Russell Group Ltd, total amount **£109,852**)

December 2016: Travel grant, *Strategy & Steering Conferences Fund*, University of Nottingham (**£600**)

July 2015: Travel grant, *European COST Action CRoNoS - IC1408* (**€600**)

February 2015: Travel grant, *Organising committee of the EVA 2015 conference* (**\$800**)

December 2014: Travel grant, *Elsevier Mathematical Sciences Sponsorship Fund* (**\$1,000**)

June 2011: Travel grant, *Société Française de Statistique* (**€500**)

Awards/Honours

June 2012: Thesis prize, *University of Strasbourg* (**€1,500**)

Academic and administrative service

As a Lecturer at ENSAI (2019-present)

- I am an academic member of the Sustainable Development committee (from October 2019).

As an Assistant Professor at the University of Nottingham (2016-2019)

- I was the Course Director of the BSc in Statistics, as well as of the BSc in Data Science run in partnership with the School of Computer Science.
- I was the organiser of the weekly research seminar of the Statistics and Probability group in the School of Mathematical Sciences (Spring 2018 - Spring 2019).

As an Assistant Professor at Aix-Marseille Université (2012-2016)

- I served (in June 2016) as a member of the recruitment panel for a specialised teaching position in Mathematics.
- I was an elected member of the faculty board within the Economics and Management department.
- I served (in 2014) as a member of the faculty committee which re-designed the mathematical content of the BSc in Economics and Management and I coordinated during two semesters the first-year, first-semester courses in Mathematics and Microeconomics.
- I served for four years as a member of the panel awarding the BSc in Mathematics Applied to Social Sciences.

Organised sessions at conferences/committee membership

I am part of the organising committee of the *43rd Research Students' Conference in Probability and Statistics*, taking place at the University of Nottingham from 23rd June to 26th June 2020.

I was the organiser of the one-day workshop *Recent advances in the statistical analysis of extreme environmental and actuarial risk*, which took place on 10th July 2018 at the University of Nottingham.

I have organised or am organising the following sessions of talks at international conferences:

- Statistical advances in extremes and risk management, **invited session** at the *12th International Conference of the ERCIM WG on Computational and Methodological Statistics*, London, UK, December 2019.
- Statistical aspects of extreme value analysis, **invited session** at the *32nd European Meeting of Statisticians*, Palermo, Italy, July 2019.
- Extremes for multivariate data, **invited session** at the *2nd Workshop on Multivariate Data and Software*, Limassol, Cyprus, April 2019.
- Statistical analysis of extremes in finance and insurance, **invited session** at the *11th International Conference of the ERCIM WG on Computational and Methodological Statistics*, Pisa, Italy, December 2018. I was also a member of the Scientific Programme Committee for this meeting.
- Applied extremes, **invited session** at the *10th International Conference of the ERCIM WG on Computational and Methodological Statistics*, London, UK, December 2017.
- Extremes and their real-life applications, **invited session** at the *9th International Conference of the ERCIM WG on Computational and Methodological Statistics*, Seville, Spain, December 2016.

Reviewing duties

I have reviewed papers for *Annals of the Institute of Statistical Mathematics*, *Annals of Statistics*, *AStA Advances in Statistical Analysis*, *Bernoulli*, *Communications in Statistics: Simulation and Computation*, *Communications in Statistics: Theory and Methods*, *Computational Statistics and Data Analysis*, *Econometrics and Statistics*, *Economic Modelling*, *Electronic Journal of Statistics*, *Extremes*, *Insurance: Mathematics and Economics*, *Journal of Business & Economic Statistics*, *Journal of the Korean Statistical Society*, *Journal of Multivariate Analysis*, *Journal of Nonparametric Statistics*, *Journal of Statistical Planning and Inference*, *Journal of Statistical Theory and Practice*, *Mathematical Biosciences*, *Metrika*, *Quantitative Finance*, *REVSTAT: Statistical Journal*, *Soft Computing*, *South African Statistical Journal*, *Statistica Sinica*, *Statistics and Computing*, *Statistics & Probability Letters*, *Statistics & Risk Modeling* and *TEST*.

I also reviewed a book for Springer in 2016.

I am currently a reviewer for the Mathematical Reviews of the AMS.

Membership of professional societies

I am a Fellow of the UK Higher Education Academy.