Gilles Stupfler

PhD in Applied Mathematics

Lecturer, ENSAI Rennes & CREST

Personal information

Date and place of birth:	15th May 1988, Strasbourg, France
Citizenship:	French
Email:	gilles.stupfler@ensai.fr
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Education

2019-2020	**Habilitation degree** University of Rennes 1 Referees: Claudia Klüppelberg, Thomas Mikosch and Olivier Wintenberger
2016-2018	**Postgraduate Certificate in Higher Education** University of Nottingham
2009-2011	**PhD in Applied Mathematics** University of Strasbourg Advisors: Stéphane Girard and Armelle Guillou Referees: Hansjörg Albrecher and Irène Gijbels
2009	**Agrégation de Mathématiques** Ranked 21st among all 252 candidates who were awarded the Agrégation
2007-2009	**MSc in Pure and Applied Mathematics** University of Strasbourg
2006-2007	**BSc in Pure and Applied Mathematics** University of Strasbourg

Employment

Sept 2019-present	**Lecturer** ENSAI Rennes & CREST
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** University of Strasbourg, Department of Mathematics

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, two semesters 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, given an event, a random variable or a $\sigma-$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-present, one semester total, module taught in English)**
  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.

- **Extreme Value Theory lectures and tutorials, Autumn semester, final-year postgraduate students in Statistics (Autumn 2020, one semester total)**
  Content: Extreme value models: Generalised Extreme Value models, Generalised Pareto models, domains of attraction. Estimation in heavy-tailed models: extrapolation, Hill estimator, choice of threshold. Estimation outside of heavy-tailed models: quasi-maximum likelihood, Pickands estimators, moment estimators, extreme quantile estimators. Real data applications.

- **Parametric Inference lectures and tutorials, Autumn semester, final-year postgraduate students in Mathematics (Autumn 2020, one semester total)**
  Content: Parametric estimation tools: asymptotic analysis of M-estimators, maximum likelihood estimation, pathologies, Fisher information matrix, Cramér-Rao lower bound and efficiency in regular models. Examples in and out of the parametric framework. Semi-parametric estimation with parametric ideas in the example of extreme value analysis.

As part of my teaching duties, I also tutor and/or supervise first- and second-year postgraduate students during their summer internships. This entails liaising with the companies where the students are based.

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 regression.
- $M-$estimation.
- Missing data frameworks.
- Hidden Markov models.

Published papers (most recent first)

[1] Gardes, L., Girard, S., Stupfler, G. (2020). Beyond tail median and conditional tail expectation: extreme risk estimation using tail L^p-optimization, *Scandinavian Journal of Statistics* **47**(3): 922–949.

[2] Mitchell, E.G., Crout, N.M.J., Wilson, P., Wood, A.T.A., Stupfler, G. (2020). Operating at the extreme: estimating the upper yield boundary of winter wheat production in commercial practice, *Royal Society Open Science* **7**(4): 191919.

[3] Daouia, A., Girard, S., Stupfler, G. (2020). Tail expectile process and risk assessment, *Bernoulli* **26**(1): 531–556.

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

[5] 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.

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

[7] 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.

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

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

[10] 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.

[11] 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.

[12] 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.

[13] 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.

[14] 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.

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

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

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

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

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

[20] Meintanis, S.G., Stupfler, G. (2015). Transformations to symmetry based on the probability weighted characteristic function, *Kybernetika* **51**(4): 571–587.

[21] 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.

[22] Gardes, L., Stupfler, G. (2015). Estimating extreme quantiles under random truncation, *TEST* **24**(2): 207–227.

[23] Guillou, A., Loisel, S., Stupfler, G. (2015). Estimating the parameters of a seasonal Markov-modulated Poisson process, *Statistical Methodology* **26**: 103–123.

[24] Stupfler, G. (2014). On the weak convergence of kernel density estimators in L^p spaces, *Journal of Nonparametric Statistics* **26**(4): 721–735.

[25] Gardes, L., Stupfler, G. (2014). Estimation of the conditional tail index using a smoothed local Hill estimator, *Extremes* **17**(1): 45–75.

[26] 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.

[27] Stupfler, G. (2013). A moment estimator for the conditional extreme-value index, *Electronic Journal of Statistics* **7**: 2298–2343.

[28] 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.

[29] Girard, S., Guillou, A., Stupfler, G. (2013). Frontier estimation with kernel regression on high order moments, *Journal of Multivariate Analysis* **116**: 172–189.

[30] 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.

[31] Girard, S., Guillou, A., Stupfler, G. (2012). Estimating an endpoint with high-order moments, *TEST* **21**(4): 697–729.

Accepted papers

[32] Church, O., Derclaye, E., Stupfler, G. (2020). Design litigation in the EU Member States: Are overlaps with other intellectual property rights and unfair competition problematic and are SMEs benefitting from the EU design legal framework?, to appear in *European Law Review*.

[33] Daouia, A., Girard, S., Stupfler, G. (2020). ExpectHill estimation, extreme risk and heavy tails, to appear in *Journal of Econometrics*.

[34] Falk, M., Stupfler, G. (2019). The min-characteristic function: characterizing distributions by their min-linear projections, to appear in *Sankhya*.

Preprints (submitted or under revision)

Padoan, S.A., Stupfler, G. (2020). Joint inference on extreme expectiles for multivariate heavy-tailed distributions.

Padoan, S.A., Stupfler, G. (2020). Extreme expectile estimation for heavy-tailed time series.

Girard, S., Stupfler, G., Usseglio-Carleve, A. (2020). Extreme conditional expectile estimation in heavy-tailed heteroscedastic regression models.

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.

Software development

R package `ExtremeRisks`, on the estimation of extreme risk measures in time-dependent contexts. Available at `https://cran.r-project.org/web/packages/ExtremeRisks/index.html`. Joint work with S.A. Padoan.

Conference and workshop talks (most recent first)

2021: *ATMS network meeting*, TBA (**invited talk**)

5th Conference of the International Society for Non-Parametric Statistics, Paphos, Cyprus (**invited talk**)

Workshop on New Developments in Econometrics and Time Series, Rennes, France (**invited talk**)

2020: *13th International Conference of the ERCIM WG on Computational and Methodological Statistics*, London, UK (**invited talk**)

Bernoulli-IMS One World Symposium 2020, online event

One-day workshop on Dynamical Systems, Probability and Statistics, Quimper, France (**invited talk**)

2019: *12th International Conference of the ERCIM WG on Computational and Methodological Statistics*, London, UK (**invited talk**)

32nd European Meeting of Statisticians, Palermo, Italy

2nd Workshop on Multivariate Data and Software, Limassol, Cyprus (**invited talk**)

2018: *11th International Conference of the ERCIM WG on Computational and Methodological Statistics*, Pisa, Italy (**invited talk**)

Recent advances in the statistical analysis of extreme environmental and actuarial risk, Nottingham, UK (**invited talk**)

2017: *10th International Conference of the ERCIM WG on Computational and Methodological Statistics*, London, UK (**invited talk**)

31st European Meeting of Statisticians, Helsinki, Finland (**invited talk**)

2016: *9th International Conference of the ERCIM WG on Computational and Methodological Statistics*, Seville, Spain (**invited talk**)

3rd Conference of the International Society for Non-Parametric Statistics, Avignon, France (**invited talk**)

Workshop on Extremes, Copulas and Actuarial Science, Luminy, France (**invited talk**)

2015: *8th International Conference of the ERCIM WG on Computational and Methodological Statistics*, London, UK (**invited talk**)

9th Conference on Extreme Value Analysis, Probabilistic and Statistical Models and their Applications, Ann Arbor, Michigan, USA (**invited talk**)

2014: *8th International Conference on Computational and Financial Econometrics*, Pisa, Italy (**invited talk**)

Workshop on Extreme Value Theory, with an emphasis on spatial and temporal aspects, Besançon, France (**invited talk**)

46èmes Journées de Statistique, Rennes, France

2013: *10èmes Journées de Statistique de Rennes*, Rennes, France (**invited talk**)

45èmes Journées de Statistique, Toulouse, France

2012: *44èmes Journées de Statistique*, Brussels, Belgium

2011: *7th Conference on Extreme Value Analysis, Probabilistic and Statistical Models and their Applications*, Lyon, France

Invited seminars (most recent first)

2021: Bocconi University, WU Wien, Aix-Marseille Université

2020: University of Grenoble

2019: University of Cardiff, Ecole Polytechnique, ENSAI Rennes (twice), Université Libre de Bruxelles

2018: Ecole Polytechnique Fédérale de Lausanne

2017: KU Leuven, University of Newcastle, University of Nottingham, University of Reading

2016: Aix-Marseille Université, University of Nottingham, University Paris Descartes

2015: University of Aveiro, University Paris Descartes, Toulouse School of Economics

2014: University of Strasbourg

2013: Aix-Marseille Université, University of Grenoble

2012: University of Grenoble, University of Lyon I, University of Montpellier, University of Nancy, INSA Toulouse, Toulouse School of Economics

2011: University of Strasbourg (twice), ISFA Lyon

Academic visits (most recent first)

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**).

I have also made several one-week long research visits, not attached to grant funding, to the Université Paris Descartes (visiting Jonathan El Methni), INRIA Grenoble Rhône-Alpes (visiting Stéphane Girard) and ISFA Lyon (visiting Stéphane Loisel).

Engagement with non-academic stakeholders

My work with Estelle Derclaye on the statistical analysis of legal decisions has led to several meetings with the European Commission and the UK Intellectual Property Office (in 2018, 2019 and 2020), during we discussed the impact of European Union policy decisions on intellectual property litigation across the European Union.

Supervision activities

PhD supervision:

- Malvina Bozhidarova (October 2020-present, joint supervisors: Reuben O'Dea, Frank Ball and Yves van Gennip). *Statistical analysis of risk, failure, and extreme event propagation in the airline industry using multi-level networks.* EPSRC CASE studentship in partnership with the private company Russell Group Ltd.

- Francesco Cappelli (September 2020-present, joint supervisor: Simone Padoan). *Fast and scalable statistical learning techniques for risk assessment methods based on massive data.* PhD studentship funded by the PhD programme at Bocconi University.

- Abdul Haris Jameel (October 2019-present, 4-year studentship, joint supervisors: Chris Brignell, Chris Fallaize and Joachim Grevel). Project title: *New analytical and simulation tools in clinical oncology.* PhD studentship financed by BAST Inc. Ltd (Loughborough, UK).

- Emily Mitchell (October 2016-present, 4-year studentship, joint supervisors: Neil Crout, Paul Wilson and Andrew Wood). Project title: *Statistical analysis of agricultural soils climate data to aid food security under environmental change.* PhD studentship funded by the Leverhulme Trust. Project selected for a poster presentation at the House of Commons during the STEM for Britain 2018 event.

Postdoctoral supervision: Antoine Usseglio-Carleve (October 2018-present, 2-year contract, joint supervisor: Stéphane Girard). Project title: *Estimation of extreme risk measures with covariate information.*

Informal PhD supervision:

- Yasser Abbas (January 2020-present, PhD student at the Toulouse School of Economics, on a 3-year studentship from January 2020, lead PhD supervisor: Abdelaati Daouia). Project title: *A new perspective on M-quantile regression: From L^1 to L^p optimization.*

- Hibiki Kaibuchi (October 2019-present, PhD student at SOKENDAI, Tokyo on a 3-year studentship from April 2018, lead PhD supervisor: Yoshinori Kawasaki). Project title: *A bias-reduced GARCH-EVT approach for financial risk estimation.*

Graduate internship supervision:

- 2019-2020: Yves Amevoin (*On the behaviour and estimation of extreme M-quantiles*), Brice Camel Tifa Netague (*Volatility estimation for financial time series*) and Aurélie Manaa Gonta (*Statistical estimation of the intensity of financial crises*).

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 (exceeding €10,000)

July 2020: *AXA Research Fund Flash call on Covid-19* (PI), "Tail risk management and mitigation using innovative extreme value techniques". Funding for a 2-year postdoctoral studentship and computing equipment (**€100,000**)

July 2019: *French ANR grant* (co-I), "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**)

November 2018: *Industrial PhD funding* (co-PI), "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**)

June 2017: *RPA Development Fund internal grant* (co-PI), "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 CASE funding* (co-I), "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**)

I have also been awarded numerous travel grants, bursaries for summer internships, and small seed funding grants from a variety of sources such as the French *Société Française de Statistique*, the *Elsevier Mathematical Sciences Sponsorship Fund*, European *COST* actions, the *London Mathematical Society*, the UK *EPSRC*...

Awards/Honours

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

Academic and administrative service

As a Lecturer at ENSAI (2019-present)

- I am a member of the Admissions team for the MSc in Mathematical Statistics (from 2019/2020).
- I am the Sustainable Development Officer and chair of the Sustainable Development committee (from Autumn 2019). I am also ENSAI's representative in the local Sustainable Development (CRICDD) group, made of eight institutions across all campuses in the Rennes area.

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.

Academic community service

I am the creator and current editor of the Extreme Value Analysis newsletter. This newsletter, which one can freely subscribe to by emailing directly e.v.analysis.news@gmail.com, is written for the worldwide academic extreme value community, and includes regular information about conferences, workshops, events as well as offers for PhD and post-doctoral fellowships in the area of probabilistic and statistical extreme value analysis.

Organised sessions at conferences/committee membership

I am among the original members of the organising committee of the *One World Extremes Seminar*, a series of livestreamed research talks on extreme value analysis taking place online approximately once per month from late June 2020. Speakers include Johan Segers, Gennady Samorodnitsky, Valérie Chavez-Demoulin and Anne-Laure Fougères.

I was part of the organising committee of the *43rd Research Students' Conference in Probability and Statistics*, taking place online on Tuesday 21st July 2020 (due to the COVID-19 pandemic).

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:

- Recent advances in extreme value analysis, **invited session** at the *13th International Conference of the ERCIM WG on Computational and Methodological Statistics*, virtual conference, December 2020.
- 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 was one of the referees of Timo Fuller's PhD thesis, whose title was *Contributions to the Multivariate Max-Domain of Attraction* (PhD supervisor: Michael Falk).

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 the Royal Statistical Society: Series B*, *Journal of Statistical Planning and Inference*, *Journal of Statistical Theory and Practice*, *Mathematical Biosciences*, *Metrika*, *Quantitative Finance*, *REVSTAT: Statistical Journal*, *Scandinavian Actuarial Journal*, *Scandinavian Journal of Statistics*, *Soft Computing*, *South African Statistical Journal*, *Statistica Sinica*, *Statistics*, *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 and a member of the Société Française de Statistique.