Charles TILLIER

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French / Single / 29 years old

Research interests: Heavy-tailed phenomena - Regular variation; Dietary risk assessment - Insurance; Rare events - Extreme Value Theory; Dependent time series - Markov chains; Ruin theory - Stochastic processes; Regression models - consistency

EMPLOYMENT

2017-2018: Post Doctoral position as an **Assistant researcher**. *Hamburg University*.
2016-2017: One-year **ATER** position. *Paris Nanterre*.
2013-2016: **PhD Student**. *Paris Nanterre* & *Pierre et Marie Curie* (Jussieu).
Title: « **Stochastic processes and risk indicators in insurance and dietary risk assessment** ».
Supervision: Pr. Patrice Bertail (Paris Nanterre) and Pr. Olivier Wintenberger (Jussieu).
2013: Six-month internship. *INRA, Paris*. **Development and statistical analysis of mathematical models related to dietary risk assessment**.

EDUCATION

2017: PhD in Applied mathematics. Speciality **Statistics**. *Paris Nanterre & Jussieu*.
2013: Master degree in **Applied mathematics**. *URCA, Reims*.
2012: Bachelor degree (Licence 3) in **theoretical mathematics**. *URCA, Reims*.

PUBLICATIONS

- Neumeyer, N., Selk, L. and Tillier C. (2018). **Semi-parametric transformation boundary regression models**. *Submitted.*
- Bertail P, Ciolek G and Tillier C. (2018). **Robust estimation for Markov chains with application to PDMP**. *Statistical Inference for Piecewise-Deterministic Markov Processes.*
- Tillier, C. (2018). **Extremal properties and risk indicators for dietary risk assessment models with heavy-tailed intakes**. *Preprint*.
- Tillier, C. and Wintenberger, O. (2017). **Regular variation of a random length sequence of random variables and application to risk assessment**. *Extremes*.
- Bertail, P., Clémençon S., Tillier C. (2016). **Extreme values statistics for Markov chains with applications to finance and insurance**. *Extreme Events in Finance: A Handbook of Extreme Value Theory and its Applications*. François Longin, Wiley. 139-171.
- Bertail P. and Tillier C. (2015). **La modélisation des risques d'exposition aux contaminants alimentaires**. *Risques, les cahiers de l'assurance*. N°96, 56-65.
- Tillier C. (2014). **Théorie de la ruine et risque alimentaire**. *SFDS publications*. Available at http://papersjds14.sfds.asso.fr/submission_254.pdf.

RESEARCH MANAGEMENT (Coorganisation)

- *05/2016*: **Conference** "**Risk, Extremes and Contagion**". MODAL'X, Paris Nanterre. See http://risksemester.ameriska.net/fr/conferences/risks-extremes-and-contagion.
- *01/*2016*:* **Thematic semester** "**Risk and Applications**". LSTA, Jussieu. See http://risksemester.ameriska.net/fr/home.
- *05/2015*: First Meeting "AMERISKA Network". LSTA, Jussieu.
- *10/*2014: **Workshop** "**Risk theory**". MODAL'X, Paris Nanterre.
- *05/2014*: **National Agence for Research project AMERISKA** "*Analyse Multivariée des Extrêmes et du RISQue Alimentaire*". See http://risksemester.ameriska.net/fr/home.

STAYS-FORMATION

- *2014-2017*: **Regular visits** (one week per month) at the Institute of Mathematical Sciences of the **University of Copenhagen** invited by Olivier Wintenberger.
- *06/2015*: Week-long training on "Extreme Value Theory" organised by the "Mathematical Foundations of Heavy Tailed Analysis". University of Copenhagen.
- *05/2015*: **Week-long training** at the Department of Mathematics and Statistics of the **University of Ottawa** invited by Rafal Kulik.
- *07/2014*: Institute of Actuaries Summer school organized by ISUP, LSTA and ENSAE.
- *06/2014*: Week-long training in "Model Selection in High-Dimensional Regression and Related issues" and "Firm Selection and Labor Reallocation". ENSAE, Paris.

PRESENTATIONS

Conferences

- *06/2018*: 4th ISNPS, Salerno. **Extremal behavior for a class of stochastic processes with application to risk theory**.
- *05/2018*: 50th JDS by SFDS, Paris Saclay. **Estimation and testing problems in nonparametric regression with bounded support**.
- *03/2018*: 6th Spring School "Structural Inference in Statistics", Spreewald. **Non-parametric transformation for boundary regression models**.
- *06/2017*: 10th Extreme Value Analysis, TU Delft. **Regularly varying Markov chains**.
- *05/2017*: 49th JDS by SFDS, Avignon. **Regularly varying stochastic recurrence equations**.
- *04/2017*: Workshop « Entropie, Mots et Statistique », Reims. **Study of the extremal bahavior of stochastic processes involved in risk theory**.
- *03/2017*: 7th RJS by SFDS, Porquerolles. **Extremal properties and risk indicators for dietary risk assessment models with heavy-tailed intakes**.
- *06/2016*: 3rd ISNPS. Palais des Glaces, Avignon. **A generalization of Breiman's lemma with applications in insurance**.

- *09/2015*: Eurobanking, Evergreen Business Center, Issy les Moulineaux. **Application of some statistical methods in the banking field**.
- *08/2015*: StatMathAppli organised by INRA, Villa Clythia, Fréjus. **Extreme value statistics for general Markov chains**.
- *12/2014*: Extreme Events in Finance by ESSEC, Abbaye de Royaumont. **Extreme values statistics for Markov chains with applications to Finance and Insurance.**
- *06/2014*: 46th JDS, Rennes. **Risk theory and dietary risk assessment**.

Seminars

- *12/2017*: **Nonparametric regression when the support is bounded**. INRA, Paris.
- *09/2016*: **Regular variation of a random length sequence of random variables and application to risk assessment**. MODAL'X, Paris Nanterre.
- *05/2016*: **Regular variation for Shot Noise Processes**. Inst. of Math. Sciences, *Copenhagen.*
- *02/2015*: **Multivariate regular variation theory and its applications**. LMR, *Reims.*
- *04/2015*: **Extreme values for Markov chains with applications to insurance**. LSTA, Jussieu.
- *02/2014*: **Application of ruin theory to the dietary risk assessment**. LMR, *Reims*.

Others

- *06/2017: Extremal properties of Shot Noise Processes*. 2nd meeting Ameriska. LSTA, Jussieu.
- *11/2014*: Course on « *Non-life insurance mathematics* » as part of the workshop *« Risk theory* », MODAL'X, Paris Nanterre.
- *01/2014*: *Ruin theory and dietary risk* at the working group « EVT ». LSTA, Jussieu.

Participations

- *07/2016*: Concluding International Conference « Rare » on Risk Analysis, Ruin theory and Extremes, Rare Project. La Baule, France.
- *05/2016*: Dependence, Stability and Extreme. Fields institut, Toronto.
- *05/2015*: 9th EVA. Ann Arbor, *USA.*

TEACHING

2016-2017 (***ATER***)

- *Analyse*. Bachelor (BA) degree Economics-Law Studies. Paris Nanterre.
- *Analyse*. BA degree Economics-Management. Paris Nanterre.

2015-2016 (***Independent contractor position***)

- *Analyse* (60 hours). BA degree Biology. URCA, Reims.
- *Quantitative tools* (30 hours). BA degree Economics-Management. URCA, Reims.

2014-2015 (***Independent contractor position***)

- *Upgrading in Mathematics* (30 hours). BA degree Health and Social Sciences. URCA, Reims.
- *Probability* (60 hours). BA degree Economics-Management. URCA, Reims.
- *Linear Algebra* (30 hours). BA degree Economics-Management. URCA, Reims.

- *Probability and Statistics* (30 hours). BA degree Biology. URCA, Reims.

2013-2014 (***Independent contractor position***)

- *Analyse* (60 hours). BA degree Mathematics. URCA, Reims.
- *Geometry* (20 hours). BA degree Physics. URCA, Reims

2010-2013 (***Private lessons***)

- High and Middle school (8 hours a week). Compagny Math progress. Reims

SKILLS AND OTHER ACTIVITIES

Computing

- Proficient with statistical softwares: SAS, R, VBA and SPSS.
- Thorough knowledge: Java, Html, SQL, C++ and Matlab.
- Strong knowledge of Microsoft Office.

Languages

- French: Native.
- English: Fluent.
- Spanish: Intermediate.

Interests

- President of the association of Master degree in Applied Mathematics
- President of a sport association, vice-president and treasurer of a music association.
- Coorganizer of a music festival (July 2010) that attracted over 1,500 participants.
- Music and Sport: Guitare, swimming, futsal and mountain biking.