Arthur Charpentier

Born on December 5th, 1975, in France
French nationality,
Maried, 3 children,
Professor, Université du Québec à Montréal

Home:	7416 rue St Denis, Montréal (Québec), Canada H2R 2E4
Work:	Université du Québec à Montréal, PK 5330 - 201, avenue du Président-Kennedy, Montréal (Québec), Canada H2X 3Y7
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1 Education

2016 **Habilitation à Diriger des Recherches** Université de Rennes 1 (France), "*Quelques Contributions à la Modélisation de la Dépendance et ses Applications*" Reviewers: N. El Karoui, P. Embrechts & M. Hoffmann. Jury: K. Antonio, D. Florens, J. Garrido, O. L'Haridon & S. Loisel

2006 **PhD in Mathematics** (*Doctor in de Wetenschappen, Wiskunde*), Katholieke Universiteit Leuven (KUL, Belgique), "*Dependence Structures and Limiting Results, With Applications in Finance and Insurance*". Supervisors: J. Beirlant & M. Denuit. Jury: J. Dhaene, A.L. Fougères, I. Gijbels, C. Gouriéroux & W. Schoutens.

1999 Fellow of the (French) Institute of Actuaries

1999 **Master in Applied Mathematics** (DEA MASE), Université Paris Dauphine, Paris, France

1999 **Master in Statistics and Economics, ENSAE**, Paris, France

2 Professional experience

2018/··· Professor, Département de mathématiques, **Université du Québec à Montréal** (UQAM), Montréal, Canada

2017/2018 Professor, **Université Rennes 1**, Economics Department, Rennes, France

2015/2018 Director, **Data Science for Actuaries** Program, Institut des Actuaires, Pars, France

2014/2017 Associate Professor, **Université Rennes 1**, Economics Department, Rennes, France

2011/2014 Professor, Département de mathématiques, **Université du Québec à Montréal** (UQAM), Montréal, Canada

2010/2011 Sabbatical, Visiting Professor, **Université de Montréal**, Canada

2009/2010 Associate Professor (PCC), **École Polytechnique**, Palaiseau, France

2008/2011 Associate Professor, **Université Rennes 1**, Economics Department, Rennes, France

2007/2008 Lecturer (ATER), **Université Rennes 1**, Economics Department, Rennes, France

2006/2007 Assistant Professor, **ENSAI**, National School of Statistics, Campus Ker Lan, Rennes, France

2002/2006 Assistant Professor, **ENSAE**, National School of Statistics, Paris, France

2001/2002 Researcher at the French Federation of Insurers **FFSA**, Paris, France

1999/2001 Assistant Manager, **AXA General Insurance Hong Kong Limited**, Hong Kong, China

1998/1999 Researcher at **Exane**, Fixed Income Department, Paris, France

3 Publications

Books

1. Charpentier, A., Ed. (2014). *Computational Actuarial Science, with* R. Chapman & Hall, London.
2. Charpentier, A. & Dutang, C. (2012). *Actuariat avec* R. http://cran.r-project.org/doc/contrib/
3. Charpentier, A. (2008). *Dependence Structures and Limiting Results, With Applications in Finance and Insurance.* VDM Publishers, Saarbrücken, Germany.
4. Charpentier, A. & Denuit, A. (2005). *Mathématiques de l'assurance non-vie — Tarification et provisionnement* (Tome 2). Economica, Paris [2nd ed. 2013].
5. Charpentier, A. & Denuit, A. (2004). *Mathématiques de l'assurance non-vie — Principes fondamentaux de théorie du risque* (Tome 1). Economica, Paris.

Book Chapters

1. Charpentier, A. (2018). Central Limit Theorem. In *Encyclopedia of Educational Research, Measurement, and Evaluation.* Bruce B. Frey Ed.
2. Boucher, J.-P. & Charpentier, A. (2014). General insurance pricing. In *Computational Actuarial Science, With* R (A. Charpentier, Ed.). Chapman & Hall, London, 475-510.
3. Charpentier, A. (2014). Copules. In *Statistique du risque* (J.-J. Droesbeke & G. Saporta, Eds.). Éditions Technip, Paris, 139-212.
4. Charpentier, A. (2014). Mesures de risques. In *Statistique du risque* (J.-J. Droesbeke & G. Saporta, Eds.). Éditions Technip, Paris, 41-84.
5. Charpentier, A. (2014). Statistique de l'assurance. In *Statistique du risque* (J.-J. Droesbeke & G. Saporta, Eds.). Éditions Technip, Paris, 263-298.
6. Charpentier, A. & Kaas, R. (2014). Introduction. In *Computational Actuarial Science, With* R (A. Charpentier, Ed.). Chapman & Hall, 1-72.
7. Charpentier, A. & Tufféry, S. (2014). Statistical learning. In *Computational Actuarial Science, With* R (A. Charpentier, Ed.). Chapman & Hall, London, 165-206.
8. Escoto, B. & Charpentier, A. (2014). Bayesian philosophy. In *Computational Actuarial Science, With* R (A. Charpentier, Ed.). Chapman & Hall, London, 127-164.
9. Charpentier, A., Fermanian, J.-D. & Scaillet, O. (2006). The estimation of copulas: Theory and practice. In *Copula Methods in Derivatives and Risk Management: From Credit Risk to Market Risk* (J. Rank, Ed.). Risk Books, London.

Articles in Peer Reviewed International Journals

1. Charpentier, A. & Gallic, E. (2019) Internal Migrations in France in the Nineteenth Century. *The History of the Family*, to appear.
2. Charpentier, A., Ka., N., Mussard, M. & Ndiaye, O.H. (2019). Gini Regressions and Heteroskedasticity. *Econometrics*, 7.
3. Charpentier, A, Flachaire, E. & Ly, A. (2018) Econométrie et Machine Learning. *Économie et Statistique*, à paraître.
4. Charpentier, A. & Coulmont, B. (2018). We are not alone ! (at least, most of us). Homonymy in large scale social groups . *Significance*, 15, 28-33.
5. Charpentier, A., David, A. & Elie, R. (2017). Optimal Claiming Strategies in Bonus Malus Systems and Implied Markov Chains . *Risks*.
6. Charpentier, A. & Pigeon, M. (2016). Macro vs. Micro Methods in Non-Life Claims Reserving (an Econometric Perspective) . *Risks*, 4: 1-18.
7. Geenens, G., Charpentier, A. & Paindaveine, D. (2017). Probit transformation for nonparametric kernel estimation of the copula density. *Bernoulli*, 23: 1848-1873.
8. Charpentier, A., Galichon, A. & M.Henry (2016) Local Utility and Multivariate Risk Aversion. *Mathematics of Operations Research*, 41: 466-476.
9. Charpentier, A. & Gallic, E. (2016). Kernel density estimation based on Ripley's correction. *Geoinformatica*, 20: 95-116.
10. Charpentier, A. & Flachaire, E. (2-15) Log-transform kernel density estimation of income distribution. *Actualité Économique*, 91 :141-149
11. Tavéra, J.-C. Poutineau, J.-S. PentecÃťte, I. Cadoret-David, A. Charpentier, C. Guéguen, M. Huchet-Bourdon, J. Licheron, G. & L'Oeillet, G (2015) The "Mother of All Puzzles" at thirty: a meta-analysis. *International Economics*, 141 :80-96
12. Bastos, M.T. Charpentier, A. & Mercea, D. (2015) Tents, Tweets, and Events: The Interplay Between Ongoing Protests and Social Media. *Journal of Communication*, 65: 320âĂŞ350, 2015.
13. Charpentier, A. Durand, M. (2015) Modeling earthquake dynamics. *Journal of Seismology*, 19: 721-739
14. Charpentier, A., Fougères, A.-L., Genest, C. & Nešlehová, J.G. (2014). Multivariate Archimax copulas. *Journal of Multivariate Analysis*, 126, 118–136.
15. Charpentier, A. & Le Maux, B. (2014). Insuring natural catastrophes: When should government intervene? *Journal of Public Economics*, 115, 1–17.
16. Charpentier, A. (2011). 2003'heatwave and its return period. *Climatic Change*, 101, 245–260.
17. Charpentier, A. & Mussard, S. (2011). Income inequality games. *Journal of Economic Inequalities*, 9, 529–554.
18. Charpentier, A. & Oulidi, A. (2010). Beta kernel estimation for value-at-risk of heavy-tailed loss distributions. *Statistics & Computing*, 20, 35–55.
19. Charpentier, A. (2009). Insurability of climate risks. *Geneva Papers of Risk & Insurance*, 33, 91–104.
20. Charpentier, A. & Oulidi, A. (2009). Estimating allocations for value-at-risk portfolio optimization. *Mathematical Methods in Operations Research*, 69, 395–410.

21. Charpentier, A. & Segers, J. (2009). Tails of Archimedean copulas. *Journal of Multivariate Analysis*, 100, 1521–1537.

22. Charpentier, A. (2008). Dynamic dependence ordering for Archimedean copulas and distorted copulas. *Kybernetika*, 44, 777–794.

23. Charpentier, A. & Segers, J. (2008). Convergence of Archimedean copulas. *Statistics & Probability Letters*, 78, 412–419.

24. Charpentier, A. & Sibaï, D. (2008). Dynamic flood modelling: Combining Hurst and Gumbel's approach. *Environmetrics*, 20, 32–52.

25. Charpentier, A. (2007). Insuring risks when pure premium is infinite? *Bulletin Français d'Actuariat*, 7, 67–82.

26. Charpentier, A. (2007). Actuariat et data mining: Prise en compte des corrélations. *Revue des Nouvelles Technologies de l'Information*, 143–157.

27. Charpentier, A. & Segers, J. (2007). Lower tail dependence for Archimedean copulas: Characterizations and pitfalls. *Insurance: Mathematics & Economics*, 40, 525–532.

28. Charpentier, A. & Juri, A. (2006). Limiting dependence structures for tail events, with applications to credit derivatives. *Journal of Applied Probability*, 43, 563–586.

29. Boüette, J.-C., Chassagneux, J.-F., Sibaï, D., Terron., R. & Charpentier, A. (2005). Wind in Ireland: Long memory or seasonal effect? *Stochastic Environmental Research and Risk Assessment*, 20, 141–151.

Articles in Peer Reviewed Journals, in French

1. Charpentier, A. (2018) Fake news, post-truth, Wikipedia et blockchain : vérité et consensus. Risques, 115, 115-121.

2. Charpentier, A. (2018) Les machines, les procédures et la fuite de la responsabilité. Risques, 114, 145-150.

3. Charpentier, A. (2017) Les modèles prédictifs peuvent-ils être loyaux et justes. Risques, 113, 91-97.

4. Charpentier, A. (2017) L'éthique de la modélisation dans un monde où la normalité n'existe plus. Risques, 112, 117-122.

5. Charpentier, A. (2017) Les marchés prédictifs comme technique de prévision. Risques, 111, 125-130.

6. Antonio, K. & Charpentier, A. (2017) La tarification par genre en assurance, corrélation ou causalité ?. Risques, 110, 105-111.

7. Charpentier, A. (2016) Les dérives du principe de précaution. Risques, 108, 122-128.

8. Charpentier, A. & Suire, R. (2016) Données et santé: valeurs, acteurs et santé. Risques, 107.

9. Charpentier, A. (2015) Fibonacci, les lapins, le nombre d'or et les calculs actuariels. Risques, 106, 135-140.

10. Charpentier, A. (2015) La guerre des étoiles: distinguer le signal et le bruit. Risques, 105, 125-130.

11. Charpentier, A., Eyraut-Loisel, A., Hannart, A. & Tomas, J. (2015) Changement Climatique et Assurance. Variances, 54.

12. Charpentier, A. & Cherrier, B. (2015) 'Mathiness' et Assurance. Risques, 104, 111-117.

13. Charpentier, A., Denuit, M. & Elie, E. (2015). Segmentation et Mutualisation, les deux faces d'une mÃłme pièce. Risques, 103, 19-24.
14. Charpentier, A. & Diogo Barry, A. (2014) Big data : passer d'une analyse de corrélation à une interprétation causale. Risques, 101, 107-112.
15. Charpentier, A. (2014) Interprétation, intuition et probabilités. Risques, 99, 101-107.
16. Charpentier, A. (2014). De la difficulté de faire des prévisions (quand on a peu de données) *Risques*, 98, in press.
17. Charpentier, A. (2014). La loi des petits nombres. *Risques*, 97, 99–104.
18. Charpentier, A. (2014). L'efficience des marchés: Hypothèse de modèle ou fait stylisé? *Risques*, 96, 122–127.
19. Coulmont, B., Charpentier, A. & Gombin, J. (2014). Un homme, deux voix: Le vote par procuration. *La vie des idées*, February 11.
20. Charpentier, A. (2012). De la difficulté de faire parler des chiffres pour analyser la gravité des accidents de la route. *Variances*, 45, 57–59 .
21. Charpentier, A. (2011). La loi des grands nombres et le théroème central limite comme base de l'assurabilité? *Risques*, 86, 136–141.
22. Charpentier, A. (2010). Quel avenir pour les systèmes bonus-malus? *Risques*, 83, 44–49.
23. Charpentier, A. (2010). La modélisation en réassurance. *Risques*, 80, 36–41.
24. Charpentier, A., Devineau, L. & Nessi, J.-M. (2010). Mesurer le risque lors du calcul des provisions pour sinistres à payer. *Risques*, 83, 93–100.
25. Charpentier, A. (2009). Value at risk et probabilité de ruine, entre vaccination et banque d'affaires. *Risques*, 76, 103–106.
26. Charpentier, A. (2007). Ajuster les tables de mortalité: Le rôle des actuaires. *Risques*, 72, 127–130.
27. Charpentier, A. (2007). La crédibilité: Un pasteur et un philosophe pour soutenir les actuaires. *Risques*, 71, 122–126.

Other

Proceedings

1. Charpentier, A. (2008). Optimal reinsurance under ruin probability target. *Proceedings of the Rare Event Simulation Conference.*
2. Charpentier, A. (2008). Pricing catastrophe options in incomplete market. *Proceedings of the Actuarial and Financial Mathematics Conference: Interplay Between Finance and Insurance.*
3. Charpentier, A. (2003). Tail distribution and dependence measures. *Proceedings of the ASTIN Conference*, Berlin.

Working Papers

1. Charpentier, A. & Gallic, E. . (2018) étude de la démographie française du XIXe siècle à partir de données collaboratives de généalogie . hal:01724269, *submitted*.
2. Cocteau-Senn, D., Charpentier, A. & Bigot, R. (2018) La protection des données personnelles en assurance : dialogue du juriste avec l'actuaire *Ceprisca*, *submitted*

3. Diago Barry, A., Charpentier, A. & Oualkacha, K. (2017) Quantile and Expectile Regression for random effects model . hal:01421752, *submitted*.

4. Charpentier, A. (2014). Blogging in academia: A personal experience. *Submitted*: ssrn:2398377

5. Boudreault, M. & Charpentier, A. (2012). Multivariate integer-valued autoregressive models applied to earthquake counts. hal:00646848

6. Charpentier, A. (2010). Reinsurance, ruin and solvency issues: Some pitfalls. *Working Paper*: hal:00463381

7. Charpentier, A. & Causeur, D. (2009). Lunar cycles and birth rates. *Working Paper*: hal:00482743

Media

- Most of the research can't be done by universities because we can't access the data, Universitat de Barcelona (interview, $\triangleright$)

- Why should you be a data addict? Universitat de Barcelona (interview, $\triangleright$)

- Le casino des catastrophes, La Revue Dessinée no 12, (interview, $\triangleright$)

- How social media usage does and does not predict protests, Washington Post 2015 (article, $\triangleright$)

- You can vote twice! The many political appeals of proxy votes in France, Washington Post 2014 (article, $\triangleright$)

- Arthur Charpentier on Freakonometrics, Machine Learning and Big Data, Economic RockStar (interview, $\triangleright$)

- Un homme, deux voix : le vote par procuration, La Vie des Idées (article, $\triangleright$)

- #fakenews : non, l'IA ne peut pas prédire les émeutes, Science & Vie (interview, $\triangleright$)

- Les données actuarielles des assureurs, un trésor pour la connaissance client ?, Les Echos, (article, $\triangleright$)

- Nous ne pourrons plus opposer segmentation et mutualisation, l'Argus de l'Assurance (interview, $\triangleright$)

- Peut-on vraiment prévoir la probabilité de gagner une élection présidentielle ?, The Conversation (article, $\triangleright$)

- Les promesses de la blogosphère économique, Alternative, Économique (article, $\triangleright$)

- Arctique : à la recherche du pÃťle Nord, l'Actualité (article, $\triangleright$)

- Doit-on avoir peur de l'intelligence artificielle?, Journal Metro (interview, $\triangleright$)

- Mondial 2018 : des chercheurs rennais prévoient la victoire de la France contre l'Uruguay, France Bleue (interview, $\triangleright$)

- Coupe du Monde 2018 : des chercheurs de Rennes prévoient la victoire de la France face à l'Uruguay, RTL (interview, $\triangleright$)

4 Teaching

Recent (since 2015)

- **Econometrics and Machine Learning**, Summer School of the Italian Econometrics Society (2019), Universitat de Barcelona (2018), Università degli Studi dell'Insubria (2018), Université de Bretagne Loire (2017)
- **Use and value of unusual data in Insurance**, Summer School of the Swiss Association of Actuaries (2019)
- **Non-life Actuarial Modeling**, ENSAE (Master, 2015-2017)
- **Networks and Flows**, Université de Rennes 1 (Master, 2017)
- **Inequalities**, Université de Rennes 1 (Master, 2016-2018)
- Course STT5100 **Applied Linear Regression**, UQAM (2018, 2019)

Probability and Statistics

ACT2121, **Actuariat I**, probability for SoA exam P, UQAM (2012, 2013); STT2700 **Concepts and Methods in Statistics**, Université de Montréal (2011); **Multivariate models** (M1), Université Rennes 1 (2009); **Statistics** (M2), Université des sciences économiques, Ho-Chi-Minh Ville, Vietnam (2008); **Advanced Statistical Techniques** (M2), Université Saint-Joseph, Beyrut, Lebanon (2006).

Economics & Finance

Practicals **Microeconomics**, École Polytechnique, course by M.-L. Alain & P. Picard (2010); **Asset Pricing**, École Polytechnique, with A. Galichon (2009, 2010), **Advanced Methods in Portfolio Management** (M2), Université Rennes 1 (2008); **Numerical Techniques in Finance** (M2), ENSAI (2005–2007); **Option Pricing** (M2), Institut de gestion de Rennes (2005–2006).

Econometrics

Course ACT6420 **Predictive Modeling**, UQAM (2011, 2012, 2014); **Financial Econometrics** (M2), Université Rennes 1 (2008); **Econometrics** (M1), Université Rennes 1 (2008, 2009); **Financial Econometrics** (M2), Institut de gestion de Rennes (2007); **Nonlife Insurance** (M2), ENSAE, with F. Bucchini (AXA Cessions C.E.O., 2002–2007).

Time Series and Processes

Time Series (graduate), UQAM–ISM, (2014); **Stochastic Calculus for Insurance Modeling** (M2), ISUP (Institut de statistique de l'Université de Paris) (2008); **Markov Chains** (M1), ENSAI (2007); **Time Series** (M2), Université Paris Dauphine (2001–2005).

Risk Mesures, Multiple Risks and Modeling Extremal Events

Crash course **Risk Measures** (PhD), Louvain-la-Neuve (2014); MAT8886 **Copulas and Extreme Values** (graduate), UQAM–ISM (2012, 2014); **Economics of Uncertainty** (M2 recherche), Université Rennes 1 (2009); **Risk Measures and Copulas** (M2), ENSTA (École nationale supérieure des techniques avancées), Paris (2007); Short course on **Dependence in Finance and Insurance**, 17th Actuarial Summer School in Warsaw, Warsaw University, Poland (2007); **Risk Measures**, Centre d'études actuarielles & Institut des actuaires (2006); **Correlated Risks in Finance** (M2), ENSAI (2005–2007) **Correlated and Extremal Risks in Finance** (M2), Université Paris Dauphine, with

C. Hess (2003–2005); **Measuring and Hedging Catastrophic Risk**, Fourth Brazilian Conference on Statistical Modelling in Insurance and Finance (2009); **Reinsurance** (M2), ENSAE (2004–2007); **Reinsurance** (M2), Institut de mathématiques appliquées, Angers (2007); **Reinsurance** (M2), Université Paris I Sorbonne (2007).

Insurance

Cours ACT2040 **Non-Life Insurance Mathematics**, UQAM (2011–2013); STT6705V **Statistics of Insurance** (graduate) Université de Montréal (webcast at l'Université de Rennes 1) 2010; **Statistics of Insurance** (M2), Université de Rennes 1 (2009–2010) and (M1), Université de Rennes 1 (2010–2011); **Non-Life Insurance Mathematics** (M2), ENSEA, Abidjan, Ivory Coast (2003).

5 Student Training and Supervision

Supervision

2019/··· A. Barme, Assurance et compétition, UQAM, PhD

2018/2019 M. James, Assurance du risque inondation, Univ. Bretagne Ouest, Master

A. Barme, Assurance et compétition, ENSAE, Master

2017/2018 J. Martail, Données spatiales et systèmes électoraux : allocation des bureaux de votes et gerrymandering flou, Université de Rennes, Master

2017/2018 E. Gallic, démographie & données collaboratives, PostDoc [*now* Aix-Marseille School of Econ.]

2017/··· E. Betz, Econométrie et données agrégées, PhD

2016/2017 A. Goussebaïle, catastrophes naturelles & prévention, PostDoc [*now* ETH Zürich]

2015/2017 E. Betz, Evalution du préjudice corporel pour les accidents de la route, Université de Rennes, Master

2014/2015 A. David, Markov Chains and Incentives in Motor Insurance, Université de Rennes, Bachelor

2014/2015 C. Davesne, Contrôle optimal et réassurance, ENSAE, Master Program.

2012/2013 J. Viard, Modélisation de la mortalité au Lac Saint-Jean dans un cadre familial, Université de Rennes 1, Master Program.

C. Tremblay-Bergeron, Lois mélanges et classification: Application aux tremblements de terre, UQAM, Bachelor Program [NSERC grant]

2012/··· A. Barry, Causalité et économétrie: Application à la modélisation de l'obésité, UQAM, Doctorat [SSHRC grant]

2011/2012 E. Gallic, Analyse spatio-temporelle, UQAM & Université de Rennes 1, Master Program

M. Durand, Modèles dynamiques sur les tremblements de terre, UQAM, Bachelor Program

O. Bernardin, Ecological fallacy et problème de données agrégées en économétrie, UQAM, Bachelor Program

G. Chau & A.N. Dinh, Mesures de provision cohérentes et méthodes ligne à ligne pour des risques non-vie, ENSAE, Master Program, co-supervised with F. Planchet (Univ. Lyon 1).

T. Anglade & K. Masset, Analyse de la rentabilité de contrats d'assurance vie à garanties complexes sous Solvabilité II, ENSAE, Master Program, co-supervised with B. Menoni (SIA Conseil)

A. Caria, Contrats de fidélité en bancassurance, Actuarial Thesis, Centre d'études actuarielles

2008/2009 E. Dupuy & A. Kha, Le risque tempête en Europe, ENSAE, Master Program, co-supervised with G. Gorge and M. Choux (AXA GRM)

C. Pravin & J. Payen, Provisionnement et incertitude à un an, ENSAE, Master Program, co-supervised with A. Deleurence and E. Pierron (AXA GRM)

F. Portier, Valorisation d'options par arbre, Université Rennes 1, Master Program

2006/2008 A. Oulidi, Modèles nonparamétriques en science actuarielle, Actuarial Thesis, Centre d'études actuarielles

2005/2006 Valorisation d'option par tranformée d'Esscher (Gerber-Shiu), Université Paris I, Master Program

Prime de Wang et application en réassurance, Université Paris I, Master Program

Tendance et réchauffement climatique, ENSAE, Master Program, co-supervised with E. Masse (ENSAE)

E. Quéma & J. Ternat, Valorisation par indifférence d'utilité, ENSAE, Master Program, co-supervised with R. Elie (ENSAE-CREST)

B. Favetto, Mesures non-additive et applications en économie, ENS Cachan, Master Program

2004/2005 K. El Dairi, Probabilistic arithmetics: Bornes sur des transformées de couples de variables aléatoires, ENSAE, Master Program

A. At, A. Fortin, C. Gosselin & M. Lenoir, Tables de mortalité prospectives et le modèle de Lee & Carter, ENSAE, Master Program

2003/2004 D. Sibaï, Modélisation des inondations, ENSAE, Master 2, Master Program

Mesure spectale et risques extrêmes, le project *Neptun*, ENSAE, Master Program

Espérance d'utilité et approche duale en économie, ENSAE, Master Program, co-supervised with B. Menoni (CREST)

2002/2003 J.-C. Bouëtte, J.-F. Chassagneux, D. Sibaï & R. Terron, Mémoire longue et tempêtes, ENSAE, Master Program

Committees

2018 Member of the Examination Jury of the PhD thesis *Applications of Artificial Intelligence in E-Commerce and Finance* Yang Jiao, Telecom SudParis (Supervisor : J. Jakubovitch)

Member of the Examination Jury of the PhD thesis *Analyses prospectives de mortalité : approches actuarielle et biomédicale* Edouard Debonneuil, Université de Lyon 1 (Supervisor : S. Loisel & F. Planchet)

2017 Member of the Examination Jury of the PhD thesis *Three empirical essays on moral hazard identification in insurance* Alexandre Godzinski, école des Hautes études en Sciences Sociales, PSE (Supervisor: P.Y. Geoffard)

2016 Member of the Examination Jury of the PhD thesis *Gini-PLS regression: an application on European agriculture incomes inequalities* Fattouma Souissi, Université de Montpellier (Supervisor: S. Mussard)

2015 Member of the Examination Jury of the PhD thesis *Prevention and Insurance of Natural Catastrophes*, Arnaud Goussebaïle, École Polytechnique (Supervisor: J.M. Bourgeon)

Member of the Examination Jury of the PhD thesis *Optimal personalized treatment learning models with insurance applications* L. Guelamn, Universitat de Barcelona (Supervisor: M. Guillen)

2014 Member of the Examination Jury of the PhD thesis *Contribution to the weak convergence of empirical copula processes & to the stochastic claims reserving in general insurance* P. Sloma, Université Paris VI Pierre & Marie Curie (Supervisor: P. Deheuvels), Rapporteur

2014 Member of the Examination Jury of the PhD thesis *Multivariate Skew Models with Applications in Loss Reserving and Reinsurance* M. Pigeon, Université de Louvain (Supervisor: M. Denuit)

2013 Member of the Examination Jury of the PhD thesis *Quantifying biometric life insurance risks with non-parametric smoothing methods* J. Tomas, Universiteit van Amsterdam (Supervisor: R. Kaas)

2011 Member of the Examination Jury of the PhD thesis *Outils théoriques et opérationnels adaptés au contexte de l'assurance vie en Afrique subsaharienne francophone: Analyse et mesure des risques liés à la mortalité*, A. Kamega, Université Lyon 1 (Supervisor: F. Planchet), Rapporteur

Member of the Examination Jury of the PhD thesis *Vine copulas and conditional correlation in finance*, P.-A. Maugis, Université Paris I Sorbonne (Supervisor: D. Guégan), Rapporteur

2010 Member of the Examination Jury of the PhD thesis *Contribution à l'étude du processus empirique de copule*, T. Zari, Université Paris VI Pierre & Marie Curie (Supervisor: P. Deheuvels)

Member of the Examination Jury of the PhD thesis *Effets des comportements risqués des conducteurs sur la sinistralité: Analyse empirique sur des données françaises*, M. Maatig, Université Paris II Assas (Supervisor: M. Grun-Rehomme), Rapporteur

2008 Member of the Examination Jury of the PhD thesis *Nouvelles approches de l'étude de la sinistralité en assurance automobile*, N. Benlagha, Université Paris II Assas (Supervisor: M. Grun-Rehomme), Rapporteur

2018/··· Juries of Master Thesis, UQAM, Université Laval

2017/··· Member of the *services financier retail* Task Force of the Direction Générale du Trésor (Ministry of Finance).

2017 Member of the jury of the *datavisualization competition* (Assises du Transport Aérien)

2013/2014 Member of the *General Insurance & Statistical Application* Task Force of the SoA (Society of Actuaries), chaired by S. Klugman.

2003/2006 Member of the Examination Jury for the Institute of Actuaries

2003/2005 Member of the Examination Jury for the École Nationale d'Administration (ENA)

6 Conferences and Seminars

Conferences (Invited)

Third International Congress on Actuarial Science and Quantitative Finance Manizales, Colombia, June 2019, Risk Analytics Symposium [*keynote*], Chicago, U.S., May 2019, InsurTech Summit [*keynote*], University of California, Santa Barbara, U.S., May 2019, Natural Catastrophe Economics Workshop, Risk Center, ETH Zürich, Switzerland, January 2019, Rencontres Mutualistes [*keynote*], Beaune (SCOR), France, November 2019, XXVIIIth International Biometric Conference, Barcelona, Spain, July 2018, European R Users Meeting, Budapest , Hungary, May 2018, Ecole Thématique sur l'Évaluation des Politiques Publiques, March 2018, Big data empirics and policy analysis, Bank of England, London, UK November 2017 [*keynote*], Artificial Intelligence for fintech and insurtech , Institut Henri Poincaré, Paris, France, October 2017, New challenges in the measurement of economic inequalities and injustices , Aix-Marseille, May 2017, CartoStats, Paris Diderot, France, May, 2017, Dependence Modelling with Applications in Finance and Insurance, Athens, Greece, May 2017, Comprendre et Anticiper la Révolution du Numérique en Assurance, Caen, France, May 2017, Statistical Learning and Data Science, Rotterdam, Netherlands, April 2017, Sciences XXL [*keynote*], INED Paris, France, March 2017 3rd International MACroeconomics workshop (IMAC), Rennes, France, December 2016, Ordinal and Multidimensional Inequalities, Montpellier, France, November 2016, Droit des données personnelles, Amiens, France, November 2016, 3rd EAJ Conference, Lyon, France, September 2016, ICABE 2016 - International Conference on Applied Business and Economics, Paris, France, September 2016, Big Data : la recherche s'expose, Paris, France, May 2016, Rencontres de l'Actuariat [*keynote*], Paris, France, May 2016, Centre for Central Banking Studies, London [*keynote*], UK, May 2016, Asociación Española de Gerencia de Riesgos y Seguros Summer School, Barcelona, Spain, May 2016, Colloque Extremes, copulas & actuarial science, Luminy, France, May 2016, 6th BreizhCamp [*keynote*], Rennes, France, May 2016, Data Day [*keynote*], Niort, France, March 2016, Big Data & Environment, Buenos Aires, Argentina, November 2015, IA|BE Summer School [*keynote*], Louvain, Belgium, September 2015, ACP meeting [*keynote*], Leuven, Belgium, September 2015, Journées de Statistiques , Lille, France, May 2015, 22nd International Forecasting Financial Markets Conference , Rennes, France, May 2015, Insurance & Finance Colloquium, Le Mans, France, November 2014, R in Insurance [*keynote*], London, U.K. July 2014, Canadian Statistical Society Annual Conference, Toronto, May 2014, World Social Science Forum, Montréal, October 2013, R/Rmetrics Meielisalp Workshop & Summer School on Computational Finance and Financial Engineering, Meielisalp, Switzerland, June 2012, Workshop Risque et changement climatique, ISFA, Lyon, November 2011, Workshop on Insurance Mathematics, Montréal, January 2011, Risk Intelligence Symposium & Knowledge 2009 Session: Financial risks, credit risk, Long term risk, environment risk & insurance risk, Paris, October 2009, International workshop on dynamic and multivariate risk measures, Université Paris Dauphine, October 2009 Workshop Analyse spatio-temporelle des risques, Université de Grenoble, August 2009, Conférence Banque de France, Université de Rennes 1, June 2009, Satellite Meetings, Rio de Janeiro, April 2009 Fourth Brazilian Conference on Statistical Modelling in Insurance and Finance, Sao Paulo, April 2009 Summer School of the Groupe consultatif actuariel européen: Enterprise Risk Management (ERM) and Solvency II, ISFA, Lyon, July 2008 International Workshop on Applied Probability, Université de Compiègne, July 2008 Grands risques et réassurance, Université Paris Dauphine, June 2008 Journées de statistiques SSC–SFdS, Ottawa, Canada, May 2008 Public Economics At the Regional and Local level in Europe, Rennes, May 2008, Actuarial and Financial Mathematics Conference (interplay between Finance and Insurance), Brussels, Belgium, February 2008 Workshop: Solvency II and internal models, Sepia, Paris, September 2007, Workshop: Risk measures and capital allocation, Sepia, Paris, June 2007, 3ème Congrès de l'Institut des actuaires, Paris, June 2007, Workshop: Insurance and Adaptation to Climate Change, École Polytechnique, Paris, March 2007, Conférence: Statistiques et assurance, Institut de mathématiques appliquées, Angers, November 2006, Conference AXA - ENSAE, October 2004,

Conferences

Mathematical Finance Days, Montréal, May 2014, Mathematical Finance Days, Montréal, May 2013, Journées de finance mathématique, HEC Montréal, May 2012, Journées de la Société canadienne de sciences économiques, Mont Tremblant, May 2012, Journées de la Société canadienne de sciences économiques, Sherbrooke, May 2011, 7^{th} International Workshop on Rare Event Simulation, Rennes, September 2009, Workshop: Prospective mortality tables, longevity and mortality linked securities, Paris, February 2008, Gemeinsame Jahrestagung der Deutschen Mathematiker-Vereinigung und der Gesellschaft für Didaktik der Mathematik, Multivariate Dependence Modelling using Copulas - Applications in Finance, Humboldt-Universität zu Berlin, Allemagne, March 2007, Journées Extraction et gestion des connaissances, Université de Namur, Namur, Belgique, January 2007, Conference Insurance Mathematics and Economics, Leuven, Belgium, July 2006, Journées SfDS (Société française de statistique), XXXVIIIèmes Journées de statistique, Clamart, May 2006, Journées de statistique rennaise, Rennes, November 2005, Conference: Extreme values, copulas and applications day (X-Day 1), Université de Montréal, Canada, June 2005, Conference Insurance Mathematics and Economics, Québec, Canada, June 2005, Conference Statistique sur données dépendantes, CREST, Paris, January 2005, Journees de statistique rennaise, Rennes, October 2004, 3rd Conference in Actuarial Science & Finance on Samos, Greece, August 2004, Journees SfDS, XXXVIèmes Journées de statistique, Montpellier, May 2004, Conference Dependence Modeling: Statistical theory and applications in finance and insurance, Univ. Laval, Québec, Canada, May 2004, Conference: Statistical issues in actuarial risk modeling: Dependence modeling and detrending, EURANDOM, Technische Universiteit Eindhoven, Netherlands, September 2003, ASTIN Colloquium (Actuarial STudies In Non-life insurance) Berlin, Allemagne, Août 2003, Conference Insurance Mathematics and Economics, Lyon, June 2003, ASTIN Conference, Paris, June 2000.

Seminars

University of Wisconsin, Madison, U.S., October 2019, University of Waterloo, Waterloo, Canada, September 2019. University of California, Santa Barbara, U.S. May 2019, UQAM, Montreal, Canada, April 2019, Université Laval, Quebec, January 2019, UQaM, November 2018, Telecom ParisTech, France, May 2018 Università degli Studi dell'Insubria, Varese, Italy, April 2018, ESSEC, Paris, France, November 2017, Université Laval, Quebec, Canada, October 2017, University of Michigan, Ann Arbor, U.S. July 2017, Université de Caen, France, May 2017, Université Paris Diderot, France, May 2016, Université Catholique de Louvain, Belgium, May 2015, Big Data Group, Institut des actuaires, May 2014, Université Laval, Québec, April 2014, Collectif pour le développement et les applications en mesure et évaluation (Cdame), April 2014, Université de Sherbrooke, December 2013, Society of Actuaries, November 2013 [webinar], Universiteit van Amsterdam, January 2013, HEC Lausanne, January 2013, GeoTop, UQAM, January 2012, Université Laval, May 2011, Université Laval, April 2011, Université Laval, March 2011, Groupe de travail Desjardins Assurance, February 2011, HEC Montréal, November 2010, McGill University, November 2010, Séminaire Milliman, May 2010, SCOR Internal Seminar, May 2010, Université de Rennes I, February 2010, Groupe de travail ESSEC, Paris, December 2009 Université de Montpellier, April 2009, Université de Brest, April 2009, ENSAI-Université Rennes I & Université Rennes II, April 2008, Université de Nantes, April 2008, Université Paris 6, March 2008, Université Rennes I, CREM, March 2008, Universiteit van Amsterdam, Netherlands, January 2008, Université Toulouse I, GREMAQ, December 2007, Imperial College, London, United Kingdom, May 2007, Paris Sciences-Economiques, ENS Cachan, March 2007, Université de Grenoble, March 2007, Université Paris X (Nanterre), March 2007, Univeristé de Compiègne, January 2007, Universidad de Valparaíso, Chili, December 2006, ENSAI-Université Rennes I & Université Rennes II, September 2006, Paris Jourdan - Sciences Economiques (séminaire ENS-EHESS-ENPC-X), Paris, September 2006, Katholieke Universiteit Leuven, Belgium, February 2006, Institut de mathématiques appliqués, Angers, January 2006, ENSAI, April 2005, Université Paris 1, November 2004, Séminaire de LFA du CREST, Paris, June 2004, Université Paris Dauphine, May 2004, Université Catholique de Louvain, Belgium, November 2003, Université Catholique de Louvain, Belgium, May 2003, Séminaire A.F.F.I. (Association française de dinance), November, Paris, 2002 Commission Dommage de l'Institut des actuaires, Paris, October 2001.

Popular Conferences

À qui appartient le pôle nord, Cœur des Sciences, UQAM, March 2014, *Big Brother, Big Data*, Cœur des Sciences, UQAM, February 2014

Conference Organization

2018 Co-organizer of the *Data Science and applications to insurance and finance conference*, Paris, *with Florian Pelgrin (EDHEC Lille) Julie Josse (École Polytechnique) Katrien Antonio (KU Leuven & Universiteit van Amsterdam) Julien Trufin (Université Libre de Bruxelles) Alexandre Boumezoued (Milliman Paris, R&D) Michael Ludkovki (University of California, Santa Barbara) Florence Jusot (Université Paris Dauphine) Meglena Jeleva (Université Paris Nanterre) FranÃğois Pannequin (CREST) Pierre-Yves Geoffard (Université Paris 1) Alfred Galichon (NYU) Dylan Possomai (Columbia University)*

2018 Co-organizer of the *Measurement of Ordinal and Multidimensional Inequalities Workshop*, Université de Rennes, *with Fabien Moizeau (Université de Rennes 1) Frank Cowell (London Sschool of Economics) Kirsten Rohde (Erasmus School of Economics, Rotterdam) Stéphane Zuber (Paris School of Economics) Alain Chateauneuf (Paris School of Economics) Nicolas Gravel (Center for Social Sciences and Humanities, Delhi) Emmanuel Flachaire (Aix-Marseille School of Economics) Olivier L'Haridon (Université de Rennes 1)*

2015/2018 Co-organizer of the ACTINFO Semainar *invited speakers : Xavier Milhaud (ISFA), MickaÃńl Dupont (COVEA), Antoine Ly (Univ Paris Est), Katrien Antonio (Katholieke Universiteit Leuven), Etienne Arbogast (COVEA), Alexandre Godzinski (PSE), Daniel Dexcheemaekere (COVEA), Christophe Dutang (Paris Dauphine), Ewen Gallic (Univ Rennes), Julien Truffin (Universite Libre de Bruxelles), Sebastien Conort (BNP Paribas), Maxlimilien Baudry (ISFA), Nicolas Baradel (ENSAE), Fabrice Rossi (Telecom ParisTech)*

2012 Member of the Scientific Committee, Journées SFdS-Bruxelles 2012

2009 Organizer of the *Economics and Econometrics of Insurance Workshop*, Université Rennes 1, *with Olivier Cabrignac (SCOR, Paris), Georges Dionne (HEC Montréal), Emmanuel Dubreuil (Aon Benfield, Paris), Pierre-Yves Geoffard (Paris School of Economics), Guillaume Gorge (AXA Group Risk Management, Paris), Renaud Legal (CNAM, Paris), Stéphane Loisel (ISFA, Lyon), Pierre Picard (éEcole Polytechnique, Paris), Klaus Schmidt (TU Dresden, Dresde), Nicolas Treich (INRA & Toulouse School of Economics)*

2008 Organizer of the session *Copulas and Dependence Models* (speakers: A.-C. Favre (INRS Québec), S. Loisel (ISFA Lyon) & J. Nešlehová (ETHZ)), Journées de Statistique, Ottawa, Canada

Scientific Committees

2014/2016 Member of the evaluation committee for the FRQNT (*Fonds de recherche du Québec — Nature & technologie*) for graduate and postgraduate students, in financial mathematics

2012 Scientific Committee of the *44e Journées de Statistiques* Univeristé Libre de Bruxelles, Belgium

2009 Scientific Committee of the *UseR*! Conference, AgroCampus, Rennes

2008/2011 Scientific Committee of the AXA-X-ENSAE Chaire on *Large Risks*

2008/2009 Co-organizer of the seminar *macroeconomics & finance* at CREM, Université de Rennes 1

2008/2012 Member of the ANR project AstéRisk *spatio-temporal dependence in the modelisation of risk* (chaired by V. Maume-Deschamps, & P. Soulier)

2003/2005 Member of the TELEMAQUE Group on the *Government & Insurance Markets*, Commissariat général au plan, chaired by J.-P. Betbèze

2006 Scientific Advisor, Conseil de la concurrence (on Third Party Medical Insurance)

2007 Datamining dans la banque, l'assurance et la finance, *Scientific Committee*, ENST Bretagne

2005 Conference Data Mining et apprentissage statistique: Applications en assurance, *Scientific Committee*, Université de Niort.

Reviewer

Reviewer for *Stochastic Environmental Research and Risk Assessment*, *Theory and Decision*, *Insurance: Mathematics and Economics* (6), *Journal of Banking and Finance*, *The Canadian Journal of Statistics*, *Journal of Computational and Graphical Statistics*, *Journal of Multivariate Analysis* (8), *Communications in Statistics: Theory and Methods* (3), *Quantitative Finance*, *Journal of the American Statistical Association*, *TEST*, *Asia-Pacific Journal of Financial Studies*, *Statistics and Decision*, *Kybernetika*, *European Journal of Finance*, *Mathematics and Financial Economics*, *Statistica Sinica*, *Extremes* (3), *Physics and Chemistry of the Earth*, *Computational Statistics*, *Geneva Papers on Risk* (3), *Bernoulli*, *Water Ressources*, *Statistics & Probability Letters*, *Mathematical Finance*, *Journal of Risk*, *Scandinavian Actuarial Journal*, *Advances in Statistical Analysis*, *European Actuarial Journal* (3), *Metrika*, *Journal of Statistical Planning and Inference* (2), *Annals of Applied Statistics*, *Constructive Approximation*, *Econometric Reviews*, *Annals of Economics and Statistics*, *Annals of Actuarial Science*, *Journal of the Royal Statistical Society – Series B*, *Mathematics of Social Sciences*, *Economic Theory* (2), *Journal of Statistical Software* (2), *Journal of Population Economics*, *Journal of Statistical Software*, *Journal of Population Economics* , *Risks* , *Journal of Zhejiang University - Science A* , *Journal of Time Series Analysis*, *European Journal of Operation Research* , *Econometrica* , *Dependence Modeling*, *Journal of Economic Behavior & Organization*, *North American Actuarial Journal*

Reviewer for grant applications, MITACS Québec (2019), FNR Luxembourg CORE program (2018), F.R.S.-FNRS, Belgium (2016, 2017, 2018), IVADO, Montréal, Canada (2017), Pays de la Loire, France (2015), National Security Agency (NSA), *Mathematical Sciences Grant Program* (2013), Natural Sciences and Engineering Research Council (NSERC), Canada (2011, 2013, 2014), Fonds de recherche du Québec — Nature et technologies (FRQNT), Canada (2014), Agence nationale pour la recherche (ANR), France (2013), AXA Research Fund (2009, 2010).

Reviewer for tenure positions, Heriot-Watt University and HEC Lausanne - Université de Lausanne

Awards and grants

2019 Institut des Actuaires Research Grant

2018-2020 UQAM starting grant

2017 Université de Rennes 1, Travel Grant

2015-2019 ANR (*Agence Nationale pour la Recherche*, France), ORDINEQ project *Ordinal and Multivariate Inequalities*

2015-2018 Chaire ACTINFO, Institut Louis Bachelier

2015 PEPS MoMIS *Networks and Finance*

2012-2014 NSERC (*Natural Sciences and Engineering Research Council of Canada*), discovery grant

2011 Chaire Groupama-Dauphine

2010-2012 Geneva Association on Risk and Insurance,

2008-2012 ANR (*Agence Nationale pour la Recherche*, France), AST&Risk project *Approches spatio-temporelles pour la modélisation du risque*

2009-2012 Chaire AXA-X-ENSAE,

2009-2012 PES (*Prime d'Excellence Scientifique*)

2006 Scor-Tillinghast PhD Price

Editor

2019 Risks : editor of a Special Issue "*Insurance: Spatial and Network Data*"

2019/2023 REVSTat : member of the Editorial Board

2018/··· ASTIN Bulletin : member of the Editorial Board

2014-2018 European Actuarial Journal : Associate Editor

2011-2014 Bulletin Français d'Actuariat : Associate Editor

7 Miscellaneous

2008/··· Editor of the academic blog http://freakonometrics.hypotheses.org (∼ 350,000 visitors per year and of the Twitter account @freakonometrics (∼ 25,000 followers)

2010 Biennale d'art contemporain in Rennes, with J. Prévieux

2002 Member of the "Jury du Livre Inter" (contemporary literature) (Winner: Christian Gailly)

Google Scholar :	MOiB_W4AAAAJ 1196 citations, h-index 19, i10-index 25
Orcid :	0000-0003-3654-6286
Scopus :	16023934700
ResearcherID :	M-9933-2013
dblp:	Charpentier:Arthur
RePEc:	pch1623
Github :	freakonometrics

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