

# ARTHUR CHARPENTIER

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🐦 freakonometrics | 🎓 scholar | URL: <https://freakonometrics.github.io/>

## Topics

Predictive Modeling, Actuarial Science & Insurance, Mathematics Economics, Networks & Algorithms, Statistics & Econometrics, Statistics & Machine Learning, Climate Modeling, Extremes & Dependence, Inequalities & Fairness

## Bio

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### Experience

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| <b>Université du Québec à Montréal</b><br><i>Professor, Mathematics Department</i>                      | Montréal, Canada<br><i>since 2018</i> |
| <b>Université de Rennes</b><br><i>Professor, Faculty of Economics</i>                                   | Rennes, France<br><i>2017-2018</i>    |
| <b>Institut des Actuaire</b><br><i>Director, Data Science for Actuaries Program</i>                     | Paris, France<br><i>2015-2018</i>     |
| <b>Université de Rennes</b><br><i>Assistant Professor - Maître de Conférences, Faculty of Economics</i> | Rennes, France<br><i>2014-2017</i>    |
| <b>Université du Québec à Montréal</b><br><i>Professor, Mathematics Department</i>                      | Montréal, Canada<br><i>2011-2014</i>  |
| <b>Université de Montréal</b><br><i>Visiting Professor, Mathematics Department</i>                      | Montréal, Canada<br><i>2010-2011</i>  |
| <b>École Polytechnique</b><br><i>Professeur Chargé de Cours, Economics Department</i>                   | Palaiseau, France<br><i>2008-2010</i> |
| <b>Université de Rennes</b><br><i>Assistant Professor - Maître de Conférences, Faculty of Economics</i> | Rennes, France<br><i>2007-2010</i>    |
| <b>École Nationale de la Statistique et d'Analyse de l'Information</b><br><i>ENSAI, Lecturer</i>        | Ker Lann, France<br><i>2006-2007</i>  |
| <b>École Nationale de la Statistique et de l'Administration Économique</b><br><i>ENSAE, Lecturer</i>    | Malakoff, France<br><i>2002-2006</i>  |
| <b>French Federation of Insurers</b><br><i>FFA (ex FFSA), Statistics department</i>                     | Paris, France<br><i>2001-2002</i>     |
| <b>AXA General Insurance Hong Kong Limited</b><br><i>Pricing and Reserving Actuary</i>                  | Hong Kong, China<br><i>1999-2001</i>  |
| <b>Exane</b><br><i>Fixed Income Research Department</i>   | Paris, France<br><i>1998-1999</i>     |

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### Education

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|---|-------------------------------|
| <b>Université de Rennes</b><br><i>Habilitation à diriger des recherches</i> | Rennes, France<br><i>2017</i> |
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| <b>Katholieke Universiteit Leuven</b><br><i>Doctor in de Wetenschappen Wiskunde - PhD in Applied Mathematics</i>                       | Leuven, Belgium<br>2006  |
| <b>École Nationale de la Statistique et de l'Administration Économique</b><br><i>ENSAE, MSc. in statistics &amp; actuarial science</i> | Malakoff, France<br>1999 |
| <b>Université Paris Dauphine</b><br><i>DEA MASE, MSc. in mathematical economics &amp; finance</i>                                      | Paris, France<br>1999    |

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## Affiliations

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|---|------|
| <b>Adjunct Professor</b><br><i>University of Waterloo</i>   | 2020 |
| <b>Current</b><br><i>CRM, HumanIA, Chaire PARI, DEEL-MILA, Réseau de recherche épidémiologie et santé publique<br/>Réseau de recherche sur le numérique</i> |      |
| <b>Previous</b><br><i>CREM, GERAD, CREST, École Polytechnique</i>   |      |

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## Honors and other activities

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| <b>Louis Bachelier Fellowship</b><br><i>Academic Fellow</i>   | Paris, France<br>since 2021 |
| <b>Risks</b><br><i>Member of the Editorial Board</i>  | since 2019                  |
| <b>Astin Bulletin Editorial Board</b><br><i>Journal of the International Actuarial Association, member of the Editorial Board</i> | since 2018                  |
| <b>European Actuarial Journal</b><br><i>Associate Editor</i>  | since 2014                  |
| <b>Institut des Actuaire Fellow</b><br><i>Member of the International Actuarial Association (IAA)</i>                             | Paris, France<br>since 2003 |

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## Selected recent services

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| <b>HCÉRES</b><br><i>Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur<br/>Evaluation committee president</i> | Paris, France<br>2020          |
| <b>FRQNT Grants</b><br><i>Member of the jury (B1/B2/B3-03E), Master, PhD, Postdocs</i>   | Québec, Canada<br>since 2019   |
| <b>Faculty of Science, UQAM</b><br><i>Member of the Research Committee</i>   | Montréal, Canada<br>since 2018 |
| <b>Bachelor Program in Actuarial Science, UQAM</b><br><i>Member of the supervising committee</i>                                       | Montréal, Canada<br>since 2018 |
| <b>Conseil de Faculté, Université de Rennes</b><br><i>Member of the faculty board</i>  | Rennes, France<br>2016-2018    |

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## Data & Code

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|---|----------------------|
| <b>Insurance Pricing Game</b><br><a href="http://pricing-game.com/">http://pricing-game.com/</a> with A. Farzanehfar & F. Houssiau (Imperial College) | AICrowd<br>2020-2021 |
| <b>CASDataset 1.0-11</b><br><a href="http://cas.uqam.ca/">http://cas.uqam.ca/</a>   | R<br>since 2015      |

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## Dissemination

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| <b>Hypotheses Blog Notebook</b> <a href="https://freakonometrics.hypotheses.org/">https://freakonometrics.hypotheses.org/</a><br>~ 1.2 million visitors, 3 million page views per year | since 2008             |
| <b>Twitter account</b> <a href="#">@freakonometrics</a><br>Scientific dissemination, ~ 27,950 followers  | since 2010             |
| <i>Coronavirus : un pic très net de mortalité en France depuis le 1er mars...</i>  | Le Monde 2020          |
| <i>#fakenews : non, l'IA ne peut pas prédire les émeutes</i>   | Sciences & Vie 2019    |
| <i>Les données actuarielles des assureurs, un trésor pour la connaissance client ?</i>   | Les Echos 2018         |
| <i>Arthur Charpentier on Freakonometrics, Machine Learning and Big Data</i>  | Economic Rockstar 2018 |
| <i>Les Cat Bonds ont de l'avenir</i>   | France Culture 2018    |
| <i>Coupe du Monde 2018 : des chercheurs de Rennes prévoient la victoire de la France</i>   | RTL 2018               |
| <i>Peut-on vraiment prévoir la probabilité de gagner une élection présidentielle ?</i>   | La Tribune 2017        |
| <i>Le casino des catastrophes</i>  | La Revue Dessinée 2016 |
| <i>How social media usage does and does not predict protests</i>   | Washington Post, 2015  |
| <i>You can vote twice! The many political appeals of proxy votes in France</i>   | Washington Post, 2014  |
| see <a href="https://freakonometrics.github.io/dissemination/">https://freakonometrics.github.io/dissemination/</a> for more details   |                        |

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## Selected expertise

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|---|---------------------------|
| <b>International Monetary Fund (IMF)</b><br><i>Assessing Central Bank Solvency</i>                            | Washington DC, US<br>2021 |
| <b>International Fund for Agricultural Development (IFAD) United Nations</b><br><i>NLP and Topic Modeling</i> | Roma, Italy<br>2020-2021  |
| <b>HMG Finance</b><br><i>First-In First-Out (FIFO) vs Last-In First-Out (LIFO), perpetual rents</i>           | Paris, France<br>2012     |

## Academic activities



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### Recent conferences organization

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|---|-----------------------------|
| <b>Emerging Insights in Insurance Statistics</b><br><i>with E. Valdez, J. Cao &amp; H. Jeong</i>                                    | BIRS, Banff, Canada<br>2022 |
| <b>Journées de la Statistique</b><br><i>SFdS (Société Française de Statistique) Annual Meeting (scientific committee)</i>           | Lyon, France<br>2022        |
| <b>3rd Insurance Data Science conference</b><br><i>with M. Gesmann, I. Kyriakou, S. Pesenti &amp; A. Tsanakas</i>                   | London, UK<br>2021          |
| <b>36th Meeting of the Canadian Econometric Study Group</b><br><i>Machine Learning Econometrics, at UQAM (scientific committee)</i> | Montreal, Canada<br>2019    |
| <b>Atlantic Causal Inference Conference</b><br><i>University McGill (scientific committee)</i>                                      | Montreal, Canada<br>2019    |
| <b>Workshop on data science for actuarial applications</b><br><i>ACTINFO Chair, with Chairs at University CB Lyon (ISFA)</i>        | Paris, France<br>2018       |
| <b>Workshop on multivariate inequalities</b><br><i>ANR Ordineq, with O. L'Haridon &amp; B. Taroux</i>                               | Rennes, France<br>2018      |

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Selected talks at conferences


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| <b>Actuarial Sciences and Applications</b><br><i>title to be confirmed (invited)</i>   | CIRM, Luminy, France<br>2022             |
| <b>Social Consequences of Algorithmic Forecast</b><br><i>title to be confirmed (invited)</i>   | Bologna, Italy<br>2021                   |
| <b>Workshop on Applications of Mean Field Games</b><br><i>title to be confirmed (invited speaker)</i>  | Chicago, US<br>2021                      |
| <b>SSC (Statistical Society of Canada) Annual Conference</b><br><i>Autocalibration &amp; Premium Calculations (invited session)</i>  | Canada<br>2021                           |
| <b>IME (Insurance: Mathematics &amp; Economics) Annual Conference</b><br><i>Autocalibration &amp; Premium Calculations</i>   | Champaign, Illinois, US<br>2021          |
| <b>ASTIN Annual Conference</b><br><i>Autocalibration &amp; Premium Calculations</i>  | Orlando, Florida, US<br>2021             |
| <b>MODCOV19-CNRS</b><br><i>Modèles épidémiologiques pour analyse coût-efficacité sous incertitude (invited speaker)</i>  | Paris, France<br>2020                    |
| <b>Machine learning for economists and applied social scientists</b> <br><i>Machine Learning in Actuarial Science &amp; Insurance (plenary speaker)</i> | Hallifax, Canada<br>2020                 |
| <b>Actuarial and Financial Mathematics Conference</b><br><i>Insurance Pricing in Competitive Markets (invited speaker)</i>   | Brussels, Belgium<br>2020                |
| <b>Online International Conference in Actuarial science and finance</b><br><i>Modeling Joint Lives within Families</i>   | Lyon, France<br>2020                     |
| <b>Risk Analytics Conference</b><br><i>Actuarial Pricing and Competition, University of Illinois (keynote speaker)</i>   | Chicago, US<br>2019                      |
| <b>UCSB InsurTech Summit</b><br><i>Insurance Pricing in Competitive Markets (invited speaker)</i>  | Santa Barbara, US<br>2019                |
| <b>Natural Catastrophe Economics Workshop</b><br><i>Assessing Probabilities with Climate Change (invited speaker)</i>  | Zürich, Swiss<br>2019                    |
| <b>XXVIIIth International Biometric Conference</b><br><i>Collaborative Genealogical Data in Demography (invited session)</i>   | Barcelona, Spain<br>2018                 |
| <b>European R Users Meeting</b> <br><i>Collaborative Genealogical Data in Demography (invited speaker)</i>  | Budapest, Hungary<br>2018                |
| <b>Ecole Thématique sur l'Évaluation des Politiques Publiques</b><br><i>Evaluation du préjudice corporel en assurance automobile (invited speaker)</i>   | Aussois, France<br>2018                  |
| <b>Big data empirics and policy analysis</b><br><i>Insurance: Risk Pooling or Price Segmentation (keynote speaker)</i>   | Bank of England, London, UK<br>2017      |
| <b>Artificial Intelligence for fintech and insurtech</b><br><i>Insurance Pricing and Competition (invited speaker)</i>   | IHP, Paris, France<br>2017               |
| <b>New challenges in the measurement of economic inequalities</b><br><i>Extended Pareto Models and Incomes (invited speaker)</i>   | Marseille, France<br>2017                |
| <b>Cartostats</b><br><i>La Ville en Économie (invited speaker)</i>   | Université Paris Diderot, France<br>2017 |
| <b>Dependence Modelling with Applications in Finance and Insurance</b><br><i>Insurance Pricing and Competition (invited speaker)</i>   | Athens, Greece<br>2017                   |

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| <b>Comprendre et Anticiper la Révolution du Numérique en Assurance</b>                          | Caen, France                               |
| <i>Assurance et Responsabilité (invited speaker)</i>  | 2017                                       |
| <b>Statistical Learning and Data Science</b>  | Erasmus University, Rotterdam, Netherlands |
| <i>Quantiles and Expectiles (invited speaker)</i>   | 2017                                       |
| <b>Sciences XXL</b>   | INED, Paris, France                        |
| <i>Collaborative Data in Genealogy (invited speaker)</i>  | 2017                                       |
| <b>3rd International MACroeconomics workshop (IMAC)</b>   | Rennes, France                             |
| <i>From Micro to Macro (invited speaker)</i>  | 2016                                       |
| <b>Ordinal and Multidimensional Inequalities</b>  | Montpellier, France                        |
| <i>Pareto Models and Incomes (invited speaker)</i>  | 2016                                       |
| <b>Droit des données personnelles</b>   | Amiens, France                             |
| <i>Assurance &amp; RGPD (règlement général sur la protection des données) (invited speaker)</i> | 2016                                       |
| <b>3rd EAJ Conference (European Actuarial Journal)</b>  | Lyon, France                               |
| <i>Big Data and Insurance (invited speaker)</i>   | 2016                                       |
| <b>International Conference on Applied Business and Economics</b>                               | Nanterre, France                           |
| <i>Natural Catastrophes and Government Intervention</i>   | 2016                                       |
| <b>Big Data : la recherche s'expose</b>   | Paris, France                              |
| <i>Big Data and Insurance (invited speaker)</i>   | 2016                                       |
| <b>Centre for Central Banking Studies</b>   | Bank of England, London, UK                |
| <i>Big Data and Insurance (keynote speaker)</i>   | 2016                                       |
| <b>Asociación Española de Gerencia de Riesgos y Seguros</b>                                     | Barcelona, Spain                           |
| <i>Machine Learning and Insurance (keynote speaker)</i>   | 2016                                       |
| <b>Big Data &amp; Environment</b>   | Buenos Aires, Argentina                    |
| <i>Impact of time Granularity on Statistical Modeling (invited speaker)</i>                     | 2015                                       |
| <b>IA BE Summer School</b>  | Louvain, Belgium                           |
| <i>Machine Learning and Insurance (keynote speaker)</i>   | 2015                                       |
| <b>ACP meeting</b>  | Leuven, Belgium                            |
| <i>Big and Small Data in Insurance (invited speaker)</i>  | 2015                                       |
| <b>Journées de Statistiques</b>   | Lille, France                              |
| <i>Probit transformation for nonparametric kernel estimation of the copula density</i>          | 2015                                       |
| <b>22nd International Forecasting Financial Markets Conference</b>                              | Rennes, France                             |
| <i>Copulas and Finance</i>  | 2015                                       |
| <b>Insurance &amp; Finance Colloquium</b>   | Le Mans, France                            |
| <i>Risk Measures and Pareto Models</i>  | 2015                                       |
| <b>R in Insurance</b>   | London, UK                                 |
| <i>Getting into Bayesian Wizardry... with the eyes of a muggle actuary (keynote speaker)</i>    | 2014                                       |
| <b>SSC annual conference</b>  | Toronto, Canada                            |
| <i>Risk Measures and Pareto Models (invited session)</i>  | 2014                                       |
| <b>Mathematical Finance Days</b>  | HEC Montréal, Canada                       |
| <i>Risk Measures and Pareto Models</i>  | 2014                                       |
| <b>World Social Science Forum (UNESCO)</b>  | Montréal, Canada                           |
| <i>Academic Blogging</i>  | 2013                                       |
| <b>Mathematical Finance Days</b>  | HEC Montréal, Canada                       |
| <i>Quantiles Estimation from Heavy Tailed Distribution</i>                                      | 2013                                       |

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| <b>6th R/Rmetrics Summer School on Computational Finance</b><br><i>Actuarial Science with R (invited speaker)</i>                               | Meielisalp, Swiss<br>2012      |
| <b>Journées de la Société Canadienne de Sciences Économiques</b><br><i>Modeling dynamic incentives an application to basketball</i>             | Mont Tremblant, Canada<br>2012 |
| <b>Québec-Ontario Workshop on Insurance Mathematics</b><br><i>Quantiles Estimation from Heavy Tailed Distribution</i>                           | Montréal, Canada<br>2012       |
| <b>Mathematical Finance Days</b><br><i>Fast Computations on Binomial Trees</i>  | HEC Montréal, Canada<br>2012   |
| <b>Journées de la Société canadienne de sciences économiques</b><br><i>Insurance of Natural Catastrophes When Should Government Intervene ?</i> | Sherbrooke, Canada<br>2011     |
| <b>Changement climatique et gestion des risques</b><br><i>Modeling heat-waves: return period for non-stationary extremes</i>                    | Lyon, France<br>2011           |
| <b>Journées d'Etudes Statistique</b><br><i>Copulas, Insurance and Risk Measures (invited speaker)</i>   | Luminy, France<br>2010         |
| <b>IA-Lyon Summer School</b><br><i>Solvency II' newspeak 'one year uncertainty for IBNR' : the bootstrap approach</i>                           | Lyon, France<br>2010           |
| <b>Financial Risks International Forum</b><br><i>Multiple Risk Measures</i>   | Paris, France<br>2010          |
| <b>Assessment and Mitigation of Emerging Risks</b><br><i>Emerging risks: an actuarial perspective</i>   | Paris, France<br>2009          |
| <b>R.I.S.K. Symposium</b><br><i>Incertitude des régimes des retraites</i>   | Paris, France<br>2009          |
| <b>Workshop Finance &amp; Insurance</b><br><i>Estimation of quantile related risk measures (invited speaker)</i>                                | Sao Paulo, Brazil<br>2009      |
| <b>Workshop on Actuarial Science</b><br><i>IBNR and quantification of uncertainty</i>   | Belo Horizonte, Brazil<br>2009 |
| <b>7th International Workshop on Rare Event Simulation (RESIM)</b><br><i>Optimal Reinsurance with ruin probability target</i>                   | Rennes, France<br>2008         |

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Selected talks at academic seminars

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|---|------------------------------------|
| <i>Institut Louis Bachelier</i>   | <i>Paris, France, 2021</i>         |
| <i>HEC Montréal, IRE - CREE Seminar</i>   | <i>Montréal, Canada, 2021</i>      |
| <i>Science Po (TransNum)</i>  | <i>Paris, France, 2020</i>         |
| <i>University of Connecticut, Actuarial Seminar</i>   | <i>Storrs, CT, US, 2020</i>        |
| <i>University of New South Wales (UNSW)</i>   | <i>Sydney, Australia, 2020</i>     |
| <i>Aix-Marseille School of Economics (AMSE)</i>   | <i>Marseille, France, 2020</i>     |
| <i>European Network for Business and Industrial Statistics (ENBIS)</i>                          | <i>Palaiseau, France, 2020</i>     |
| <i>Paris Machine Learning Group</i>   | <i>Paris, France, 2020</i>         |
| <i>CMAP, École Polytechnique</i>  | <i>Palaiseau, France, 2020</i>     |
| <i>AICS </i> | <i>Toronto, Canada, 2020</i>       |
| <i>Chaire Pari (Programme sur l'Appréhension des Risques et des Incertitudes)</i>               | <i>Paris, France, 2019</i>         |
| <i>ESSEC Risk Seminar</i>   | <i>Paris, France, 2019</i>         |
| <i>University of California, Actuarial &amp; Statistical Seminar</i>                            | <i>Santa Barbara, CA, US, 2019</i> |
| <i>University of Wisconsin, Risk &amp; Insurance Semainar</i>                                   | <i>Madison, WI, US, 2019</i>       |

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| <i>University of Waterloo, Actuarial Seminar</i>               | <i>Waterloo, Canada, 2019</i>       |
| <i>UQAM, LATECE, Computer Science Seminar</i>                  | <i>Montreal, Canada, 2019</i>       |
| <i>Université Laval, Quantact Actuarial Seminar</i>            | <i>Québec, Canada, 2019</i>         |
| <i>UQAM, Economics Seminar</i>                                 | <i>Montreal, Canada, 2018</i>       |
| <i>Telecom ParisTech</i>                                       | <i>Paris, France, 2018</i>          |
| <i>Università degli Studi dell'Insubria, Economics Seminar</i> | <i>Varese, Italy, 2018</i>          |
| <i>ESSEC Risk Seminar</i>                                      | <i>Paris, France, 2018</i>          |
| <i>Université Laval, Economics Seminar</i>                     | <i>Québec, Canada, 2018</i>         |
| <i>University of Michigan, Mathematics Seminar</i>             | <i>Ann Arbor, US, 2017</i>          |
| <i>Université de Caen, Economics Seminar</i>                   | <i>Caen, France, 2017</i>           |
| <i>Université Paris Diderot, Statistics Seminar</i>            | <i>Paris, France, 2016</i>          |
| <i>Université Catholique de Louvain</i>                        | <i>Louvain, Belgium, 2015</i>       |
| <i>GERAD, Université de Montréal</i>                           | <i>Montréal, Canada, 2014</i>       |
| <i>Université Laval, Computational Science Seminar</i>         | <i>Quebec, Canada, 2014</i>         |
| <i>Centro de Investigación en Matemáticas</i>                  | <i>Guanajuato, Mexico, 2014</i>     |
| <i>Universiteit van Amsterdam</i>                              | <i>Amsterdam, Netherlands, 2013</i> |
| <i>HEC Lausanne, Actuarial Seminar</i>                         | <i>Lausanne, Switzerland, 2013</i>  |
| <i>GeoTop, UQAM</i>  | <i>Montréal, Canada, 2012</i>       |
| <i>Université Laval, Statistical Seminar</i>                   | <i>Québec, Canada, 2011</i>         |
| <i>Université Laval, Business School Seminar</i>               | <i>Québec, Canada, 2011</i>         |
| <i>Université Laval, Actuarial Seminar</i>                     | <i>Québec, Canada, 2011</i>         |
| <i>HEC Montréal</i>  | <i>Canada, 2010</i>                 |
| <i>McGill University, Statistical Seminar</i>                  | <i>Montréal, Canada, 2010</i>       |
| <i>Université de Rennes, Economics Seminar</i>                 | <i>Rennes, France, 2010</i>         |
| <i>ESSEC Risk Seminar</i>                                      | <i>Paris, France, 2009</i>          |
| <i>Université de Montpellier</i>                               | <i>Montpellier, France, 2009</i>    |
| <i>Université de Brest</i>                                     | <i>Brest, France, 2009</i>          |
| <i>Université de Rennes</i>                                    | <i>Rennes, France, 2008</i>         |
| <i>Université de Nantes</i>                                    | <i>Nantes, France, 2008</i>         |
| <i>Université Pierre &amp; Marie Curie</i>                     | <i>Paris, France, 2008</i>          |
| <i>Universiteit van Amsterdam</i>                              | <i>Amsterdam, Netherlands, 2008</i> |
| <i>Université de Toulouse 1</i>                                | <i>Toulouse, France, 2007</i>       |
| <i>Imperial College</i>  | <i>London, UK, 2007</i>             |
| <i>PSE ENS Cachan</i>  | <i>Paris, France, 2007</i>          |
| <i>Université de Grenoble</i>                                  | <i>Grenoble France, 2007</i>        |
| <i>Université Paris Nanterre</i>                               | <i>Nanterre, France, 2007</i>       |
| <i>Université de Compiègne</i>                                 | <i>Compiègne, France, 2007</i>      |
| <i>Universidad de Valparaíso</i>                               | <i>Valparaíso, Chile, 2006</i>      |
| <i>ENSAI</i>   | <i>Rennes, France, 2006</i>         |
| <i>PSE Paris Sorbonne</i>                                      | <i>Paris, France, 2006</i>          |
| <i>Katholieke Universiteit Leuven</i>                          | <i>Leuven, Belgium, 2006</i>        |
| <i>Institut de mathématiques appliqués</i>                     | <i>Angers, France, 2006</i>         |

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Selected talks at practitioners seminars

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| <b>Data Driven Montréal</b><br><i>Data science and insurance (Meetup)</i>   | Montréal, Canada<br>2021 |
| <b>TD Insurance</b><br><i>Insurance pricing in competitive markets</i>  | Montréal, Canada<br>2020 |
| <b>Autorité de contrôle prudentiel et de résolution (ACPR)</b><br><i>Insurance pricing in competitive markets</i> | Paris, France<br>2019    |
| <b>SCOR, Rencontres Mutualistes</b><br><i>Insurance pricing in competitive markets</i>                            | Beaune, France<br>2018   |
| <b>AON Benfield, Journées du marché</b><br><i>Insurance and climate</i>   | Paris, France<br>2018    |
| <b>Data science conference, Generali</b><br><i>Machine learning in insurance</i>                                  | Paris, France<br>2016    |
| <b>Institut des Actuaire, Big Data Semimar</b><br><i>Machine learning in insurance</i>                            | Paris, France<br>2015    |
| <b>Society of Actuaries, Predictive Modeling Seminar</b><br><i>From Generalized Linear Models to Trees</i>        | Chicago, IL, US<br>2013  |
| <b>Desjardins Reserving Seminar</b><br><i>One-year uncertainty</i>  | Montréal, Canada<br>2011 |
| <b>Milliman Reserving Seminar</b><br><i>One-year uncertainty</i>  | Paris, France<br>2010    |

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Referee for peer reviewed journals

Stochastic Environmental Research and Risk Assessment, Theory and Decision, Insurance: Mathematics and Economics, Journal of Banking and Finance, The Canadian Journal of Statistics, Journal of Computational and Graphical Statistics, Journal of Multivariate Analysis, Communications in Statistics: Theory and Methods, 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, Physics and Chemistry of the Earth, Computational Statistics, Geneva Papers on Risk and Insurance, Bernoulli, Water Resources, Statistics & Probability Letters, Mathematical Finance, Journal of Risk, Journal of Hydrology, Scandinavian Actuarial Journal, Advances in Statistical Analysis, European Actuarial Journal, Metrika, Journal of Statistical Planning and Inference, 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, ASTIN Bulletin, 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, Annals of Actuarial Science, Entropy, Sustainability, Risk Analysis, Journal of Statistical Computation and Simulation, North American Actuarial Journal, IEEE Transactions on Information Theory, Remote Sensing, Stochastic Processes & Applications, Journal of Mathematical Economics, Journal of Risk and Insurance



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## Reviewer activities

### Tenure review

UC Santa Barbara, HEC Lausanne, Heriot-Watt University, University of Madison Wisconsin

### Grants

ANR (Agence Nationale pour la Recherche, France), AXA Research Fund, FNR Luxembourg CORE program (Luxembourg), FRQNT (Fonds de Recherche du Québec - Nature & Technologie, Canada), F.R.S.-FNRS (Fonds de la Recherche Scientifique, Belgique), MICTACS (Mathematics of Information Technology and Complex systems, Canada), NSA (National Security Agency - Mathematical Sciences Grant Program - U.S.A.), NSERC (Natural Sciences and Engineering Research Council, Canada), IVADO (Institut de valorisation des données, Canada), ANRT (Agence Nationale Recherche & Technologie, France)

### Books

MIT Press, Springer Verlag, CRC Press, SAGE

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## Selected research visits (> 1 week)

|   |                                |
|---|--------------------------------|
| <b>University of California</b><br><i>visiting Mike Ludkovski</i>                 | Santa Barbara, CA, US<br>2019  |
| <b>Universitat de Barcelona</b><br><i>visiting Montserrat Guillen</i>             | Barcelona, Spain<br>2018       |
| <b>Università degli Studi dell'Insubria</b><br><i>visiting Raffaello Seri</i>     | Varese, Italy<br>2018          |
| <b>Harvard University</b><br><i>visiting Christine Choirat &amp; Pierre Jacob</i> | Cambridge, US<br>2017          |
| <b>Universitat de Barcelona</b><br><i>visiting Montserrat Guillen</i>             | Barcelona, Spain<br>2016       |
| <b>Centro de Investigación en Matemáticas</b><br><i>visiting Victor Rivero</i>    | Guanajuato, Mexico<br>2014     |
| <b>Universidade Federal de Minas Gerais</b><br><i>visiting Renato Assunção</i>    | Belo Horizonte, Brazil<br>2013 |

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## Master students (last 5 years only)

|                          |  |
|--------------------------|--|
| <i>Sirisha Reddy</i>     | <i>MILA, 2021</i>  |
| <i>Rawanda Matar</i>     | <i>UQAM, 2021</i>  |
| <i>Thomas Carpentier</i> | <i>Université de Lyon, France, 2021</i>                      |
| <i>Lariosse Kouakou</i>  | <i>Université de Brest, France, 2020</i>                     |
| <i>Elie Odin</i>         | <i>ENS (École Normale Supérieure) Ker Lann, France, 2020</i> |
| <i>Apollinaire Barme</i> | <i>ENSAE, Paris, France, 2019</i>                            |
| <i>Molly James</i>       | <i>Université de Brest, France, 2019</i>                     |
| <i>Enora Belz</i>        | <i>Université de Rennes, France, 2017</i>                    |
| <i>Clothilde Davesne</i> | <i>ENSAE, Paris, France, 2015</i>                            |
| <i>Julie Viard</i>       | <i>ENSAE, Paris, France, 2015</i>                            |

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## PhD Students supervision

|   |                          |                         |
|---|--------------------------|-------------------------|
| <b>Philipp Ratz</b>   |                          |                         |
| <i>Reinforcement learning and Insurance</i>   |                          | <i>starting in 2021</i> |
| <b>Samuel Stocksieker</b>   |                          |                         |
| <i>Unbalanced Data, co-supervised with D. Pommeret (Université de Lyon)</i>                 |                          | <i>2020-today</i>       |
| <b>Hongda Hu</b>  |                          |                         |
| <i>Bandits and risks, co-supervised with A. Schied (Waterloo)</i>                           |                          | <i>2020-today</i>       |
| <b>Enora Belz</b>   |                          |                         |
| <i>Etude de données agrégées et mesures d'inégalités</i>                                    |                          | <i>2016-today</i>       |
| <b>Antoine Ly</b>   | now Data Science at SCOR |                         |
| <i>Algorithmes de machine learning en assurance, co-supervised with R. Élie</i>             |                          | <i>2015-2019</i>        |
| <b>Amadou Barry</b>   | now McGill               |                         |
| <i>La régression expectile pour données longitudinales, co-supervised with K. Oualkacha</i> |                          | <i>2013-2019</i>        |

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## Post-doctoral supervision

|  |                                       |                  |
|--|---------------------------------------|------------------|
| <b>Amirouche Benchallal</b>  |                                       |                  |
| <i>Extracting information from satellite picture, co-supervised with Y. Bouroubi</i> |                                       | <i>2021</i>      |
| <b>Ewen Gallic</b>   | now Aix Marseille School of Economics |                  |
| <i>Extracting information from collaborative genealogical data</i>                   |                                       | <i>2017-2018</i> |
| <b>Arnaud Goussebaïle</b>  | now ETH Zürich                        |                  |
| <i>Insurance and prevention of natural catastrophes</i>                              |                                       | <i>2016-2017</i> |

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## Jury (PhD & Habilitation)

|  |                                   |             |
|--|-----------------------------------|-------------|
| <b>Nabil Kazi-Tani</b>   | Université de Lyon 1              |             |
| <i>Contrôle stochastique, mesures de risque et théorie de la ruine</i>                             |                                   | <i>2021</i> |
| <b>Loann Desboulets</b>  | Aix-Marseille School of Economics |             |
| <i>Variable selection on non-linear manifolds</i>  |                                   | <i>2020</i> |
| <b>Lenin Arango Castillo</b>   | Queen's University                |             |
| <i>Long-range dependence in stationary Gaussian time series</i>                                    |                                   | <i>2020</i> |
| <b>Sander Devriendt</b>  | KU Leuven                         |             |
| <i>Sparse predictive modeling with applications in insurance pricing and mortality forecasting</i> |                                   | <i>2020</i> |
| <b>Pierrick Piette</b>   | Université de Lyon 1              |             |
| <i>Contributions de l'Apprentissage Statistique à l'Actuariat</i>                                  |                                   | <i>2019</i> |
| <b>Oscar Alberto Quijano Xacur</b>   | Concordia University, Montréal    |             |
| <i>Computational Bayesian Methods for Insurance Premium Estimation</i>                             |                                   | <i>2019</i> |
| <b>Yang Jiao</b>   | Telecom SudParis                  |             |
| <i>Applications of Artificial Intelligence in E-Commerce and Finance</i>                           |                                   | <i>2018</i> |
| <b>Edouard Debonneuil</b>  | Université de Lyon 1              |             |
| <i>Analyses prospectives de mortalité : approches actuarielle et biomédicale</i>                   |                                   | <i>2018</i> |
| <b>Alexandre Godzinski</b>   | EHESS, PSE, Paris                 |             |
| <i>Three empirical essays on moral hazard identification in insurance</i>                          |                                   | <i>2017</i> |
| <b>Fattouma Souissi</b>  | Université de Montpellier         |             |
| <i>Gini-PLS regression: an application on agriculture incomes inequalities</i>                     |                                   | <i>2016</i> |

|   |                                   |
|---|-----------------------------------|
| <b>Arnaud Goussebaïle</b><br><i>Prevention and Insurance of Natural Catastrophes</i>                              | École Polytechnique<br>2015       |
| <b>Leo Guelman</b><br><i>Optimal personalized treatment learning models with insurance applications</i>           | Universitat de Barcelona<br>2015  |
| <b>Przemyslaw Sloma</b><br><i>Contribution to the weak convergence of empirical copula processes</i>              | Université Paris VI<br>2014       |
| <b>Mathieu Pigeon</b><br><i>Multivariate Skew Models with Applications in Loss Reserving and Reinsurance</i>      | UC Louvain<br>2014                |
| <b>Julien Tomas</b><br><i>Quantifying biometric life insurance risks with nonparametric smoothing methods</i>     | Uv Amsterdam<br>2013              |
| <b>Aymric Kamega</b><br><i>Outils adaptés au contexte de l'assurance vie en Afrique subsaharienne francophone</i> | Université Lyon I<br>2011         |
| <b>Tarek Zari</b><br><i>Contribution à l'étude du processus empirique de copule</i>                               | Université Paris VI<br>2010       |
| <b>Meriem Maatig</b><br><i>Effets des comportements risqués des conducteurs sur la sinistralité</i>               | Université Paris II Assas<br>2010 |
| <b>Noureddine Ben Lagha</b><br><i>Nouvelles approches de l'étude de la sinistralité en assurance automobile</i>   | Université Paris II Assas<br>2008 |

## Grants

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### Financial Grants

|   |                          |
|---|--------------------------|
| <b>AXA Research Fund</b><br><i>Joint research initiative, PI Single (100%) <a href="http://jridata.github.io/">http://jridata.github.io/</a></i>    | 200,000€<br>2020-2022    |
| <b>Natural Sciences and Engineering Research Council of Canada</b><br><i>Emerging Infectious Diseases Modelling Initiative, CRM-PIMS Group (2%)</i> | \$3,000,000<br>2020-2022 |
| <b>Natural Sciences and Engineering Research Council of Canada</b><br><i>NSERC-CRSNG, Discovery Grant, PI Single (100%)</i>                         | \$100,000<br>2019-2025   |
| <b>Institut des Actuaire Research Grant (France)</b><br><i>PI Single (100%)</i>   | \$8,000<br>2019          |
| <b>Agence Nationale pour la Recherche</b><br><i>ORDINEQ project Ordinal and Multivariate Inequalities (5%)</i>                                      | 525,000€<br>2015-2019    |
| <b>Institut Louis Bachelier</b><br><i>ACTINFO Research Chair, co-PI, with Romuald Élie (50%)</i>  | 558,000€<br>2015-2018    |
| <b>PEPS MoMIS, CNRS</b><br><i>co-PI, with Frédéric Giroire (30%)</i>  | 15,000€<br>2015          |
| <b>Natural Sciences and Engineering Research Council of Canada</b><br><i>NSERC-CRSNG, Discovery Grant, PI Single (100%)</i>                         | \$70,000<br>2012-2014    |
| <b>Institut Louis Bachelier</b><br><i>Chaire Groupama-Dauphine, Research Grant (100%)</i>   | 10,000€<br>2010          |
| <b>Agence Nationale pour la Recherche</b><br><i>AST&amp;Risk Approches spatio-temporelles pour la modélisation du risque (5%)</i>                   | 500,000€<br>2008-2012    |
| <b>Institut Louis Bachelier</b><br><i>Chaire AXA-ENSAE(100%)</i>  | 24,000€<br>2010          |

## Publications

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### Published papers in peer reviewed journals

1. A. Charpentier, S. Mussard & T. Ouraga\* (2021) Principal Component Analysis: A Generalized Gini Approach. *European Journal of Operation Research* doi:10.1016/j.ejor.2021.02.010
2. A. Charpentier, R. Élie, M. Laurière<sup>+</sup> & V.C. Tran (2020) COVID-19 pandemic control: balancing detection policy and lockdown intervention under ICU sustainability. *Mathematical Modelling of Natural Phenomena* doi:10.1051/mmnp/2020045
3. L. Barry & A. Charpentier (2020) Personalization as a Promise: Can Big Data Change the Practice of Insurance?. *Big Data & Society*. doi:10.1177/2053951720935143
4. A. Charpentier & E. Gallic<sup>+</sup> (2020) Can historical demography benefit from the collaborative data of genealogy websites?. *Population*, doi:10.3917/popu.2002.0391
5. A. Charpentier & E. Gallic<sup>+</sup> (2019) Using collaborative genealogy data to study migration: a research note. *The History of the Family*, doi:10.1080/1081602X.2019.1641130
6. A. Charpentier, N. Ka\*, S. Mussard & O.H. Ndiaye (2019) Gini Regressions and Heteroskedasticity. *Econometrics*, 7, doi:10.3390/econometrics7010004
7. A. Charpentier, E. Flachaire & A. Ly\* (2018) Econometrics and Machine Learning. *Economics & Statistics*, doi:10.24187/ecostat.2018.505d.1970
8. A. Charpentier & B. Coulmont (2018) We are not alone ! (at least, most of us) *Significance*, doi:10.1111/j.1740-9713.2018.01108.x
9. A. Charpentier, A. David\* & R. Élie (2017) Optimal Claiming Strategies in Bonus Malus Systems and Implied Markov Chains. *Risks*, doi:10.3390/risks5040058
10. A. Charpentier & M. Pigeon (2016) Macro vs. Micro Methods in Non-Life Claims Reserving (an Econometric Perspective). *Risks*, 4: 1-18, doi:10.3390/risks4020012
11. G. Geenens, A. Charpentier & D. Paindaveine Probit transformation for nonparametric kernel estimation of the copula density. *Bernoulli*, 2017 doi:10.3150/15-BEJ798
12. A. Charpentier, A. Galichon & M. Henry (2016) Local Utility and Multivariate Risk Aversion. *Mathematics of Operations Research*, 41: 466-476 doi:10.1287/moor.2015.0736
13. A. Charpentier & E. Gallic\* (2016) Kernel density estimation based on Ripley's correction. *Geoinformatica*, 20: 95-116, 2016 doi:10.1007/s10707-015-0232-z
14. A. Charpentier & E. Flachaire (2015) Log-transform kernel density estimation of income distribution. *Actualité Economique*, 91 :141-149, doi:10.7202/1036917ar
15. C. Tavéra, J.-C. Poutineau, J.-S. Pentecôte, I. Cadoret-David, A. Charpentier, C. Guéguen, M. Huchet-Bourdon, J. Licheron\* & G. L'Ouille\* (2015) The "Mother of All Puzzles" at thirty: a meta-analysis. *International Economics*, 141 :80-96, doi:10.1016/j.inteco.2015.01.001
16. M.T. Bastos, A. Charpentier & D. Mercea Tents, Tweets, and Events: The Interplay Between Ongoing Protests and Social Media. *Journal of Communication*, 65: 320-350, 2015 doi:10.1111/jcom.12145

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\*: graduate student; <sup>+</sup>: post doc

17. A.Charpentier & B.Le Maux (2014) Natural catastrophe insurance: How should the government intervene?. *Journal of Public Economics*, 115: 1-17, [doi:10.1016/j.jpubeco.2014.03.004](https://doi.org/10.1016/j.jpubeco.2014.03.004)
18. A.Charpentier, M.Durand\* (2015) Modeling earthquake dynamics. *Journal of Seismology*, 19: 721-739, [doi:10.1007/s10950-015-9489-9](https://doi.org/10.1007/s10950-015-9489-9)
19. A.Charpentier, A.-L.Fougères, C.Genest & J.G.Nešlehová (2014) Multivariate Archimax copula. *Journal of Multivariate Analysis*, [doi:10.1016/j.jmva.2013.12.013](https://doi.org/10.1016/j.jmva.2013.12.013)
20. A.Charpentier & S.Mussard (2011) Income Inequality Games. *Journal of Economic Inequality*, 9: 529–554, 20 [doi:10.1007/s10888-011-9184-1](https://doi.org/10.1007/s10888-011-9184-1)
21. A.Charpentier (2011) On the return period of the 2003 heat wave. *Climatic Change*, 109: 245–260, [doi:10.1007/s10584-010-9944-0](https://doi.org/10.1007/s10584-010-9944-0)
22. A.Charpentier & A.Oulidi<sup>+</sup> (2010) Beta kernel quantile estimators of heavy-tailed loss distributions. *Statistics and Computing*, 20: 35–55, [doi:10.1007/s11222-009-9114-2](https://doi.org/10.1007/s11222-009-9114-2)
23. A.Charpentier & A.Oulidi<sup>+</sup> (2009) Estimating allocations for value-at-risk portfolio optimization. *Mathematical Methods of Operations Research*, 69: 395, [doi:10.1007/s00186-008-0244-7](https://doi.org/10.1007/s00186-008-0244-7)
24. A.Charpentier & J.Segers (2009) Tails of multivariate Archimedean copulas. *Journal of Multivariate Analysis*, 100: 1521–1537, 2009 [doi:10.1016/j.jmva.2008.12.015](https://doi.org/10.1016/j.jmva.2008.12.015)
25. A. Charpentier & D. Sibai\* (2009) Dynamic flood modeling: combining Hurst and Gumbel's approach. *Environmetrics*, 20: 32–52, [doi:10.1002/env.909](https://doi.org/10.1002/env.909)
26. A.Charpentier (2008) Insurability of climate risks. *The Geneva Papers on Risk and Insurance*, 33: 91–109, [doi:10.1057/palgrave.gpp.2510155](https://doi.org/10.1057/palgrave.gpp.2510155)
27. A.Charpentier (2008) Dynamic dependence ordering for Archimedean copulas and distorted copulas. *Kybernetika*, [doi:10338.dmlcz/135890](https://doi.org/10.10338.dmlcz/135890)
28. A.Charpentier & J.Segers (2008) Convergence of Archimedean copulas. *Statistics and Probability Letters*, [doi:10.1016/j.spl.2007.07.014](https://doi.org/10.1016/j.spl.2007.07.014)
29. A.Charpentier & J.Segers (2007) Lower tail dependence for Archimedean copulas: Characterizations and pitfalls. *Insurance: Mathematics and Economics*, [doi:10.1016/j.insmatheco.2006.08.004](https://doi.org/10.1016/j.insmatheco.2006.08.004)
30. A.Charpentier & A.Juri (2006) Limiting dependence structures for tail events, with applications to credit derivatives. *Journal of Applied Probability*, [doi:10.1239/jap/1152413742](https://doi.org/10.1239/jap/1152413742)
31. J.-C.Boüette\*, J.-F.Chassagneux\*, D.Sibai\*, R.Terron\* & A. Charpentier (2006) Wind in Ireland: long memory or seasonal effect?. *Stochastic Environmental Research and Risk Assessment*, [doi:10.1007/s00477-005-0029-y](https://doi.org/10.1007/s00477-005-0029-y)

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## Books

32. G. Bénéplanc, A. Charpentier & P. Thourot (2021). Manuel de l'Assurance. Presses Universitaires de France. *to appear*
33. A.Charpentier (2014). Computational Actuarial Science with R. CRC Press.

34. A. Charpentier & C. Dutang (2013). Actuariat avec R. CRAN.
35. M.Denuit & A.Charpentier (2005) Mathématiques de l'assurance non-vie - Tarification et provisionnement (Tome 2). Economica.
36. M.Denuit & A.Charpentier (2004) Mathématiques de l'assurance non-vie - Principes fondamentaux de théorie du risque (Tome 1). Economica.
37. Collective Actuarial Community Loss Data Analytics. An open text authored by the Actuarial Community. 2019. <https://ewfrees.github.io/Loss-Data-Analytics/>

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Published papers in French & Dissemination papers

38. A. Charpentier (2021) Une mesure ne peut être un objectif. *Risques* [pdf](#)
39. A. Charpentier & L. Barry (2020) Concilier risques collectifs et décisions individuelles. *Risques* [pdf](#)
40. A. Charpentier, L. Barry & E. Gallic (2020) Quel avenir pour les probabilités prédictives en assurance ? *Annales des Mines* [10.3917/rindu1.201.0074](https://doi.org/10.3917/rindu1.201.0074) [pdf](#)
41. A. Charpentier (2020) Big Data, GAFA et assurance. *Annales des Mines* [10.3917/rindu1.201.0053](https://doi.org/10.3917/rindu1.201.0053) [pdf](#)
42. R. Bigot & A. Charpentier (2019) Repenser la responsabilité, et la causalité. *Risques* [pdf](#)
43. A. Charpentier (2019) Les autorités publiques face aux risques, de la confiance au doute. *Risques*, 119.
44. A.Charpentier & B. Cherrier (2019) La valeur de la vie. *Risques*, 118 [pdf](#)
45. A.Charpentier (2019) Les classes de risques vont-elles plus loin que les stéréotypes?. *L'actuariel*, 32 [pdf](#).
46. A.Charpentier (2019) Du pari au "marché prédictif". *Variance.eu* [pdf](#)
47. A.Charpentier (2019) Petite histoire des paris sportifs. *Variance.eu* [pdf](#)
48. A.Charpentier (2018) Les réseaux pour réinventer l'assurance ? *Risques* [pdf](#)
49. A.Charpentier (2018) Histoire du hasard et de la simulation. *Risques*, 116 [pdf](#)
50. A.Charpentier (2018) La représentation cartographique des villes. *Variance.eu*, [pdf](#)
51. A.Charpentier (2018) Fake news, post-truth, Wikipedia et blockchain : vérité et consensus. *Risques*, 115, [pdf](#)
52. A.Charpentier (2018) L'intelligence artificielle dilue-t-elle la responsabilité ?. *Risques*, 114, [pdf](#)
53. A.Charpentier (2018) Les modèles prédictifs peuvent-ils être loyaux et justes. *Risques*, 113, [pdf](#)
54. A.Charpentier (2017) L'éthique de la modélisation dans un monde où la normalité n'existe plus. *Risques*, 112, [pdf](#)
55. A.Charpentier (2017) Les marchés prédictifs comme technique de prévision. *Risques*, 111, [pdf](#)

56. Antonio, K. & A.Charpentier (2017) La tarification par genre en assurance, corrélation ou causalité ?. *Risques*, 110, [pdf](#)
57. A.Charpentier (2017) Les dérives du principe de précaution. *Risques*, 108, [pdf](#)
58. A. Charpentier & T. Renault\* (2016). Les promesses de la blogosphère économique. *L'Économie Politique*, 72:4, [10.3917/leco.072.0080](#)
59. A.Charpentier & R.Suire (2016) Données et santé: valeurs, acteurs et santé. *Risques*, 107, [pdf](#)
60. A.Charpentier (2016) Fibonacci, les lapins, le nombre d'or et les calculs actuariels. *Risques*, 106, [pdf](#)
61. A.Charpentier (2016) La guerre des étoiles: distinguer le signal et le bruit. *Risques*, 105, [pdf](#)
62. A.Charpentier, A.Eyrault-Loisel, A. Hannart, & J. Tomas<sup>+</sup> (2015) Changement Climatique et Assurance. *Variances*, 54, [pdf](#)
63. A.Charpentier & B.Cherrier (2015) 'Mathiness' et Assurance. *Risques*, 104, [pdf](#)
64. A.Charpentier, M.Denuit & R.Elie (2015) Segmentation et Mutualisation, les deux faces d'une même pièce. *Risques*, 103, [pdf](#)
65. A.Charpentier & A.Diogo\* (2015) Barry Big data : passer d'une analyse de corrélation à une interprétation causale. *Risques*, 101, [pdf](#)
66. A.Charpentier (2015) Interprétation, intuition et probabilités. *Risques*, 99.
67. A.Charpentier (2014) De la difficulté de faire des prévisions (quand on a peu de données). *Risques*, 98.
68. B.Coulmont, A.Charpentier & J.Gombin (2014) Un homme, deux voix : le vote par procuration. *La Vie des Idées*, 11 février 2014 [hal:00945233](#)
69. A.Charpentier (2014) La loi des petits nombres. *Risques*, 97, [pdf](#)
70. A.Charpentier (2014) L'efficience des marchés : hypothèse de modèle ou fait stylisé?. *Risques*, 96, [pdf](#)
71. A.Charpentier (2011) La loi des grands nombres et le théorème central limite comme base de l'assurabilité ? *Risques*, 86, [pdf](#)

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## Chapters

72. A.Charpentier & E.Flachaire (2020) Pareto Models for Risk Management *in* Recent Econometric Techniques for Macroeconomic and Financial Data, G. Dufrénot & T. Matsuki Ed., Springer Verlag, [arXiv:1912.11736](#)
73. A.Charpentier & M.Denuit (2020) On limits for machine learning algorithms in insurance *in* Insurance data analytics, F.Planchet & C.Y.Robert Ed., Economica.
74. A.Charpentier (2020) Prédiction avec des copules en finance *in* Prévisions en Finance, Charles, Darne & Ferrara Eds., Economica [hal:01151233](#)

75. D. Cocteau-Senn, A. Charpentier & R. Bigot (2019) La protection des données personnelles en assurance : dialogue du juriste avec l'actuaire *in* Regards sur lenouveau droit des données personnelles, Netter, E., Ndior, V., Puyraimond, J.F., Vergnoll, S. Eds. Ceprisca [hal:02357967](https://hal.archives-ouvertes.fr/hal-02357967) [pdf](#)
76. A.Charpentier (2018) Central Limit Theorem *in* The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation, B. Frey Ed., SAGE. [doi.org:10.4135/9781506326139.n105](https://doi.org/10.4135/9781506326139.n105)
77. A.Charpentier & R.Kaas (2014) Introduction *in* Computational Actuarial Science With R, Charpentier, A. Eds. CRC Press.
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79. B.Escoto & A.Charpentier (2014) Bayesian Philosophy *in* Computational Actuarial Science With R, Charpentier, A. Eds. CRC Press.
80. A.Charpentier (2014) Modèles statistiques du risque en assurance *in* Statistique du Risque, Dreesbeke, Maumy-Bertrand, Saporta & Thomas-Agnan Eds. Technip [pdf](#)
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#### Working Papers

84. A. Charpentier, Q.S. Guo<sup>+</sup> & M. Ludkovski (2021) Patterns and Anomalies of Loss Development in P&C Insurance Market.
85. A. Charpentier, M. Denuit & J. Trufin (2021). Autocalibration and Tweedie-dominance for Insurance Pricing with Machine Learning. [arXiv:2103.03635](https://arxiv.org/abs/2103.03635)
86. A. Charpentier, L. Barry & M. James\* (2020) Insurance against Natural Catastrophes: Balancing Actuarial Fairness and Social Solidarity. Chaire Pari [pdf](#)
87. O. Cabrignac, A. Charpentier & E. Gallic (2020) Modeling Joint Lives within Families. [arXiv:2006.08446](https://arxiv.org/abs/2006.08446)
88. A. Charpentier, R. Élie & C. Remlinger\* (2020) Reinforcement Learning in Economics and Finance. [arXiv:2003.10014](https://arxiv.org/abs/2003.10014)
89. A. Charpentier, A. Galichon & L. Vernet\* (2019) Optimal transport on large networks a practitioner guide. [arXiv:1907.02320](https://arxiv.org/abs/1907.02320)
90. A. Charpentier & Flachaire (2019) Pareto Models for Top Incomes. [hal:02145024](https://hal.archives-ouvertes.fr/hal-02145024) .
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92. A. Charpentier & E. Flachaire (2019) Extended Scale-Free Networks. [arXiv:1905.10267](https://arxiv.org/abs/1905.10267)






93. A. Charpentier (2018) An introduction to multivariate and dynamic risk measures.  
[hal:01831481](#)
94. A. Barry\*, K. Oualkacha & A. Charpentier (2017) Weighted asymmetric least squares regression for longitudinal data using GEE. [arXiv:1810.09214](#)
95. A. Barry\*, A. Charpentier & K. Oualkacha Quantile and Expectile (2016) Regression for random effects model . [hal:01421752](#)
96. M.Boudreaault & A.Charpentier (2011) Multivariate integer-valued autoregressive models applied to earthquake counts. [arXiv:1112.0929](#)
97. A.Charpentier (2010) Reinsurance, ruin and solvency issues: some pitfalls. [hal:00463381](#)
98. A.Charpentier & D.Causeur (2010) Large-scale significance testing of the full Moon effect on deliveries [hal:00482743](#)
99. A.Charpentier (2008) Pricing catastrophe options in incomplete markets .  
[citeseerx:10.1.1.572.4606](#)

## Teaching

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### Selected courses

|  |                  |
|--|------------------|
| <b>Introduction to data science and artificial intelligence</b>  | INF7100          |
| <i>Université du Québec à Montréal, Canada</i>   | 2020             |
| <b>Data Science for Actuaries</b>                                 | ACT6100          |
| <i>Université du Québec à Montréal, Canada</i>   | 2020             |
| <b>Applied Linear Models</b>                                      | STT5100          |
| <i>Université du Québec à Montréal, Canada</i>   | 2018,2019,2020   |
| <b>Statistics</b>  | STT1000          |
| <i>Université du Québec à Montréal, Canada</i>   | 2021             |
| <b>Regression</b>  | MAT7381          |
| <i>Université du Québec à Montréal, Canada</i>   | 2020             |
| <b>Non-life insurance mathematics</b>  |                  |
| <i>ENSAE, Paris, France</i>  | 2015, 2016, 2017 |
| <b>Time Series</b>   | MAT8181          |
| <i>Université du Québec à Montréal, Canada</i>   | 2014             |
| <b>Copulas and Extreme Values</b>  | MAT8595          |
| <i>Université du Québec à Montréal, Canada</i>   | 2014             |
| <b>YouTube channel</b>   |                  |
| <i>Courses ~ 27,000 views</i>  | since 2020       |

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### Summer schools

|   |      |
|---|------|
| <b>Econometrics and Machine Learning</b>  |      |
| <i>Società Italiana di Econometria (SIdE), Italy</i>                              | 2019 |
| <b>Insurance Data Science: Use and Value of Unusual Data</b>                      |      |
| <i>Summer School of the Swiss Association of Actuaries, Lausanne, Switzerland</i> | 2019 |

**Econometrics and Machine Learning***Università degli studi dell'Insubria, Italy*

2018

**Econometrics and Machine Learning***Universitat de Barcelona, Spain*

2018

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**Other Institutions***Đại học Kinh tế Thành phố Hồ Chí Minh**Vietnam, 2008**Institut de Statistique de l'Université de Paris (ISUP)**France, 2008**Institut de Mathématiques Appliqués, Angers**France, 2007**INSEA**Marocco, 2006**Université Saint-Joseph, Beyrut**Lebanon, 2006**ENSEA, Abidjan**Ivory Coast, 2003*

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**Professional training****Data Science for Actuaries***Institut des Actuaire*

Paris, France

2015-2018

**Data Science & Machine Learning for Actuaries***AXA Group*

Istanbul, Singapore &amp; Paris

2015

**Machine Learning for Insurance***MAIF Insurance*

Niort, France

2014

**Natural Catastrophes & Cat Bonds***AXA Group*

Paris, France

2007

**R for Actuarial Science***AXA & Caritat (professional training)*

Paris, France

2006-2007