

ARTHUR CHARPENTIER

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

Topics

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

Bio

Experience

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

Education

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

Affiliations

Adjunct Professor (professeur associé) <i>Université Laval (Québec)</i>	2022- 2024
Adjunct Professor <i>University of Waterloo</i>	since 2020
Current <i>CRM, HumanIA, Chaire PARI, IRT St Exupery-MILA, Réseau de recherche épidémiologie et santé publique Réseau de recherche sur le numérique, Réseau de recherche en sécurité routière du Québec</i>	
Previous <i>CREM, GERAD, CREST, École Polytechnique</i>	

Honors and other activities

Louis Bachelier Fellowship <i>Academic Fellow</i>	Paris, France since 2021
Canadian Statistical Sciences Institute (CANSSI) <i>Member of the Board of Directors</i>	Canada 2022-2025
Institut des Actuaire's Fellow <i>Member of the International Actuarial Association (IAA)</i>	Paris, France since 2003
Journal of Risk and Insurance <i>Senior Editor</i>	since 2022
Risks <i>Member of the Editorial Board</i>	since 2019
Astin Bulletin Editorial Board <i>Journal of the International Actuarial Association, member of the Editorial Board</i>	since 2018
Economics Bulletin <i>Member of the Editorial Board</i>	2021-2022
European Actuarial Journal <i>Associate Editor</i>	2014-2022

Selected recent services

HCÉRES <i>Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur Evaluation committee president</i>	Paris, France 2020
NSERC EG 1508 <i>Member of the Mathematics and Statistics Evaluation Group</i>	Ottawa, Canada since 2022
FRQNT Grants <i>Member of the jury (B1/B2/B3-03E), Master, PhD, Postdocs</i>	Québec, Canada since 2019

Faculty of Science, UQAM <i>Member of the Research Committee</i>	Montréal, Canada 2018-2021
Bachelor Program in Actuarial Science, UQAM <i>Member of the supervising committee</i>	Montréal, Canada 2018-2022
Conseil de Faculté, Université de Rennes <i>Member of the faculty board</i>	Rennes, France 2016-2018

Data & Code

Insurance Pricing Game http://pricing-game.com/ with A. Farzanehfar & F. Houssiau (Imperial College)	AICrowd 2020-2021
CASDataset 1.0-11 http://cas.uqam.ca/	R since 2015

Dissemination

Hypotheses Blog Notebook https://freakonometrics.hypotheses.org/ ~ 1.2 million visitors, 3 million page views per year	since 2008
Twitter account @freakonometrics <i>Scientific dissemination, ~ 28,100 followers</i>	2010-2021
<i>Quinquennat Macron : quelle évolution du droit des assurances ?</i>	Dalloz Actualité 2022
<i>Algorithmes : garder le contrôle</i>	L'Actuariel (44) 2022
<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 https://freakonometrics.github.io/dissemination/ for more details	

Selected expertise

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





Academic activities

Recent conferences organization

Workshop of Fairness and Discrimination in Insurance <i>with M.-P. Coté</i>	Québec, Canada 2022
Emerging Insights in Insurance Statistics <i>with E. Valdez, J. Cao & H. Jeong</i>	BIRS, Banff, Canada 2022
4th Insurance Data Science conference <i>(scientific committee)</i>	Milano, Italy 2022
Journées de la Statistique <i>SFdS (Société Française de Statistique) Annual Meeting (scientific committee)</i>	Lyon, France 2022
Association for the Development of Research in Economics and Statistics <i>Annual Doctoral Conference of ADRES (scientific committee)</i>	Paris, France 2022
3rd Insurance Data Science conference <i>with M. Gesmann, S. Pesenti & A. Tsanakas (organisation & scientific committee)</i>	London, UK 2021
36th Meeting of the Canadian Econometric Study Group <i>Machine Learning Econometrics, at UQAM (scientific committee)</i>	Montreal, Canada 2019
Atlantic Causal Inference Conference <i>University McGill (scientific committee)</i>	Montreal, Canada 2019
Workshop on data science for actuarial applications <i>ACTINFO Chair, with Chairs at University CB Lyon (ISFA)</i>	Paris, France 2018
Workshop on multivariate inequalities <i>ANR Ordineq, with O. L'Haridon & B. Taroux</i>	Rennes, France 2018

Selected talks at conferences

16th Annual Conference of Thailand Econometric Society <i>title to be confirmed (keynote)</i>	Chiang Mai University□ 2023
Sixth International Econometric Conference of Vietnam <i>title to be confirmed (keynote)</i>	Thành phố Hồ Chí Minh 2023
INFORMS 2022 Annual Meeting <i>title to be confirmed</i>	Indianapolis, IN, U.S. 2022
Workshop on Impacts of Climate Change <i>title to be confirmed</i>	Fields Institute, Toronto 2022
Deutsche Gesellschaft für Versicherungs- und Finanzmathematik (DGVMF) <i>title to be confirmed (keynote)</i>	Germany 2022
20 ans du Master d'Actuariat <i>Climate risk and insurance fairness</i>	Universtié Dauphine, Paris 2022
CFI Workshop on Impacts of Climate Change <i>Climate risk and insurance fairness</i>	Fields Institute, Toronto 2022
Simulation & IA 2022 <i>Simulations and risk (keynote)</i>	Cargèse, Università di Corsica, France 2022
Actuarial Sciences and Applications <i>title to be confirmed (invited)</i>	CIRM, Luminy, France 2022
CMStatistics <i>Modeling Joint Lives within Families (invited session)</i>	King's College, London, UK 2021

Emeritaat Jan Beirlant	Leuven, Belgium
<i>Extended Pareto distribution and applications (invited)</i>	2021
Justice sociale, l'équité et les discriminations dans les systèmes algorithmiques	CNRS
<i>Assurance et discrimination</i>	2021
IAA (International Actuarial Association) Online Joint Section Colloquium	
<i>Individual risks and collective decisions</i>	2021
Risque et Incertitude	Institut Universitaire de France (IUF)
<i>Risque de pandémie, pertes d'exploitation et incertitudes</i>	2021
5e Conférence annuelle PANORisk	Le Mans, France
<i>Autocalibration and Insurance Pricing (invited speaker)</i>	2021
SSC (Statistical Society of Canada) Annual Conference	Canada
<i>Autocalibration & Premium Calculations (invited session)</i>	2021
IME (Insurance: Mathematics & Economics) Annual Conference	Champaign, Illinois, US
<i>Autocalibration & Premium Calculations  (and panel discussion )</i>	2021
ASTIN Annual Conference	Orlando, Florida, US
<i>Autocalibration & Premium Calculations</i>	2021
MODCOV19-CNRS	Paris, France
<i>Modèles épidémiologiques pour analyse coût-efficacité sous incertitude (invited speaker)</i>	2020
Machine learning for economists and applied social scientists 	Hallifax, Canada
<i>Machine Learning in Actuarial Science & Insurance (plenary speaker)</i>	2020
Actuarial and Financial Mathematics Conference	Brussels, Belgium
<i>Insurance Pricing in Competitive Markets (invited speaker)</i>	2020
Online International Conference in Actuarial science and finance	Lyon, France
<i>Modeling Joint Lives within Families</i>	2020
Risk Analytics Conference	Chicago, US
<i>Actuarial Pricing and Competition, University of Illinois (keynote speaker)</i>	2019
UCSB InsurTech Summit	Santa Barbara, US
<i>Insurance Pricing in Competitive Markets (invited speaker)</i>	2019
Natural Catastrophe Economics Workshop	Zürich, Swiss
<i>Assessing Probabilities with Climate Change (invited speaker)</i>	2019
XXVIIIth International Biometric Conference	Barcelona, Spain
<i>Collaborative Genealogical Data in Demography (invited session)</i>	2018
European R Users Meeting 	Budapest, Hungary
<i>Collaborative Genealogical Data in Demography (invited speaker)</i>	2018
Ecole Thématique sur l'Évaluation des Politiques Publiques	Aussois, France
<i>Evaluation du prejudice corporel en assurance automobile (invited speaker)</i>	2018
Big data empirics and policy analysis	Bank of England, London, UK
<i>Insurance: Risk Pooling or Price Segmentation (keynote speaker)</i>	2017
Artificial Intelligence for fintech and insurtech	IHP, Paris, France
<i>Insurance Pricing and Competition (invited speaker)</i>	2017
New challenges in the measurement of economic inequalities	Marseille, France
<i>Extended Pareto Models and Incomes (invited speaker)</i>	2017
Cartostats	Université Paris Diderot, France
<i>La Ville en Économie (invited speaker)</i>	2017

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


Mathematical Finance Days <i>Quantiles Estimation from Heavy Tailed Distribution</i>	HEC Montréal, Canada 2013
6th R/Rmetrics Summer School on Computational Finance <i>Actuarial Science with R (invited speaker)</i>	Meielisalp, Swiss 2012
Journées de la Société Canadienne de Sciences Économiques <i>Modeling dynamic incentives an application to basketball</i>	Mont Tremblant, Canada 2012
Québec-Ontario Workshop on Insurance Mathematics <i>Quantiles Estimation from Heavy Tailed Distribution</i>	Montréal, Canada 2012
Mathematical Finance Days <i>Fast Computations on Binomial Trees</i>	HEC Montréal, Canada 2012
Journées de la Société canadienne de sciences économiques <i>Insurance of Natural Catastrophes When Should Government Intervene ?</i>	Sherbrooke, Canada 2011
Changement climatique et gestion des risques <i>Modeling heat-waves: return period for non-stationary extremes</i>	Lyon, France 2011
Journées d'Etudes Statistique <i>Copulas, Insurance and Risk Measures (invited speaker)</i>	Luminy, France 2010
IA-Lyon Summer School <i>Solvency II' newspeak 'one year uncertainty for IBNR' : the bootstrap approach</i>	Lyon, France 2010
Financial Risks International Forum <i>Multiple Risk Measures</i>	Paris, France 2010
Assessment and Mitigation of Emerging Risks <i>Emerging risks: an actuarial perspective</i>	Paris, France 2009
R.I.S.K. Symposium <i>Incertitude des régimes des retraites</i>	Paris, France 2009
Workshop Finance & Insurance <i>Estimation of quantile related risk measures (invited speaker)</i>	Sao Paulo, Brazil 2009
Workshop on Actuarial Science <i>IBNR and quantification of uncertainty</i>	Belo Horizonte, Brazil 2009
7th International Workshop on Rare Event Simulation (RESIM) <i>Optimal Reinsurance with ruin probability target</i>	Rennes, France 2008

Selected talks at academic seminars

<i>University of Illinois</i>	<i>Urbana-Champaign, IL, US, 2022</i>
<i>Centre interdisciplinaire en modélisation mathématique (CIMMUL)</i>	<i>Laval, Québec, 2022</i>
<i>Laws, Institutions and Economics</i>	<i>Nanterre, Paris, France, 2022</i>
<i>ASTIN</i>	<i>2022</i>
<i>Intel – Institute of Electrical and Electronics Engineers (IEEE)</i>	<i>Bengaluru, India, 2021</i>
<i>Université de Sherbrooke</i>	<i>Sherbrooke, Canada, 2021</i>
<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 & Statistical Seminar</i>	<i>Santa Barbara, CA, US, 2019</i>
<i>University of Wisconsin, Risk & Insurance Semainar</i>	<i>Madison, WI, US, 2019</i>
<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 Pierrre & Marie Currie</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>

Selected talks at practitioners seminars

Institut des Actuaire& Institut Louis Bachelier <i>Vision bayésienne de l'apprentissage</i>	Paris, France 2022
Journée de l'actuariat IARD (Institut des Actuaire) <i>Machine Learning : de la promesse à la réalité (table ronde)</i>	Paris, France 2022
IVADO (Communauté de pratique) <i>Insurance: biases, discrimination & fairness</i>	Montréal, Canada 2022
COV&Data Conference: IA de confiance <i>Insurance: biases, discrimination & fairness</i>	Paris, France 2022
AXA Actuarial Conference # 62 <i>Catastrophic Climate risks and Insurance</i>	Paris, France 2022
Institut Louis Bachelier & Institut des Actuaire <i>Assurance collaborative : Théorie des graphes et Actuarial</i> 	Paris, France 2021
TD Insurance <i>Insurance pricing in competitive markets</i>	Montréal, Canada 2020
Autorité de contrôle prudentiel et de résolution (ACPR) <i>Insurance pricing in competitive markets</i>	Paris, France 2019
SCOR, Rencontres Mutualistes <i>Insurance pricing in competitive markets</i>	Beaune, France 2018
AON Benfield, Journées du marché <i>Insurance and climate</i>	Paris, France 2018
Data science conference, Generali <i>Machine learning in insurance</i>	Paris, France 2016
Institut des Actuaire, Big Data Semimar <i>Machine learning in insurance</i>	Paris, France 2015
Society of Actuaries, Predictive Modeling Seminar <i>From Generalized Linear Models to Trees</i>	Chicago, IL, US 2013
Desjardins Reserving Seminar <i>One-year uncertainty</i>	Montréal, Canada 2011
Milliman Reserving Seminar <i>One-year uncertainty</i>	Paris, France 2010

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, Global Food Security, IEEE Transactions on Information Theory, Remote Sensing, Stochastic Processes & Applications, Journal of Mathematical Economics, Journal of Risk and Insurance, PLOS One, Journal of Theoretical Biology, Bulletin de l'Association Mathématique du Québec, International Journal of Mathematics in Operational Research, Systems and Control Letters, Annals of Operations Research

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)

Member of the jury (B1/B2/B3-03E) since 2019

FRQNT (Quebec) Canada

Mathematics and Statistics Evaluation Group (EG 1508) since 2022

NSERC (Canada)

Books

MIT Press, Springer Verlag, CRC Press, SAGE

Selected research visits (> 1 week)

University of California

visiting Mike Ludkovski

Santa Barbara, CA, US

2019

Universitat de Barcelona

visiting Montserrat Guillen

Barcelona, Spain

2018

Università degli Studi dell'Insubria

visiting Raffaello Seri

Varese, Italy

2018

Harvard University

visiting Christine Choirat & Pierre Jacob

Cambridge, US

2017

Universitat de Barcelona

visiting Montserrat Guillen

Barcelona, Spain

2016

Centro de Investigación en Matemáticas

visiting Victor Rivero

Guanajuato, Mexico

2014

Universidade Federal de Minas Gerais

visiting Renato Assunção

Belo Horizonte, Brazil

2013

Master students (since 2015)

<i>Martin de Closets</i>	<i>École Polytechnique, France, 2022</i>
<i>Franklin Feukam Kouhoue</i>	<i>ENSAE, Paris, France, 2022</i>
<i>Rawanda Matar</i>	<i>UQAM, 2021</i>
<i>Menna Hassan</i>	<i>American University, Cairo, Egypt, 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>Université de Rennes, France, 2015</i>

PhD Students supervision

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

PhD Students invitations

Charles Condevaux (Univ. Nîmes, France) Gilles Hacheme (AMSE, France) Loann Desboulets (AMSE, France) Bertille Picard (AMSE, France)

Post-doctoral supervision

François Hu	
<i>Natural Language Processing and Fairness</i>	<i>2022-2023</i>
Félix Foutel Rodier	<i>(next Oxford University)</i>
<i>Mathematical models for pandemics, co-supervised with H. Guérin</i>	<i>2021-2022</i>
Amirouche Benchallal	<i>now Natural Resources Canada</i>
<i>Extracting information from satellite pictures, with Y. Bouroubi</i>	<i>2021-2022</i>
Ewen Gallic	<i>now Aix Marseille School of Economics</i>
<i>Extracting information from collaborative genealogical data</i>	<i>2017-2018</i>
Arnaud Goussebaïle	<i>now ETH Zürich</i>
<i>Insurance and prevention of natural catastrophes</i>	<i>2016-2017</i>

Jury (PhD & Habilitation à Diriger des Recherches)

Meryem Yankol Schalck (Université d'Orléans); Ihsan Chaoubi (Université Laval, Québec); Antoine Heranval (Sorbonne Université); Vincent Grari (Sorbonne Université); François Hu (Institut Polytechnique de Paris); Sander Devriendt (KU Leuven); Debora Zaparova (Université de Strasbourg); Loann Desboulets (Aix-Marseille School of Economics); Lenin Arango Castillo (Queen's University); Pierrick Piette (Université de Lyon 1); Oscar Alberto Quijano Xacur (Concordia University, Montréal); Yang Jiao (Telecom SudParis); Edouard Debonneuil (Université de Lyon 1); Alexandre Godzinski (EHESS, PSE, Paris); Fattouma Souissi (Université de Montpellier); Arnaud Goussebaïle (École Polytechnique); Leo Guelman (Universitat de Barcelona); Przemyslaw Sloma (Université Paris VI); Mathieu Pigeon (UC Louvain); Julien Tomas (Uv Amsterdam); Aymric Kamega (Université Lyon I); Tarek Zari (Université Paris VI); Meriem Maatig (Université Paris II Assas); Nouredine Ben Lagha (Université Paris II Assas)

Jury (MSc)

Francis Duval, Roxane Turcotte, Olivier Binette, Julie Bélanger, Alexandre Roy-Gaumond

Jury (Prices)

Annals of Economics and Statistics

Jury for the best young researcher paper

2021

Scor Actuarial Price

MSc and PhD Best Thesis Prices

2007-today

Grants

Financial Grants

AXA Research Fund

Joint research initiative, PI Single (100%) <http://jridata.github.io/>

200,000€

2020-2022

Natural Sciences and Engineering Research Council of Canada

Emerging Infectious Diseases Modelling Initiative, Fields Group (2%)

\$3,000,000

2020-2022

MITACS (EY)

Insurance and fairness

\$30,000

2021-2022

Natural Sciences and Engineering Research Council of Canada

NSERC-CRSNG, Discovery Grant, PI Single (100%)

\$100,000

2019-2025

Agence Nationale pour la Recherche

ORDINEQ project Ordinal and Multivariate Inequalities (5%)

525,000€

2015-2019

Institut Louis Bachelier

ACTINFO Research Chair, co-PI, with Romuald Élie (50%)

558,000€

2015-2018

PEPS MoMIS, CNRS

co-PI, with Frédéric Giroire (30%)

15,000€

2015

Natural Sciences and Engineering Research Council of Canada

NSERC-CRSNG, Discovery Grant, PI Single (100%)

\$70,000

2012-2014

Institut Louis Bachelier

Chaire Groupama-Dauphine, Research Grant (100%)

10,000€

2010

Agence Nationale pour la Recherche

AST&Risk Approches spatio-temporelles pour la modélisation du risque (5%)

500,000€

2008-2012

Institut Louis Bachelier






Chaire AXA-ENSAE(100%)

24,000€

2010

Publications

Published papers in peer reviewed journals


1. A.Charpentier & E. Flachaire (2022). Oaxaca-Blinder decomposition: The case of the mean log deviation inequality index, *Economics Bulletin*
2. R. Bigot, A. Cayol & A. Charpentier (2022) Risque de pandémie, pertes d'exploitation et incertitudes des garanties assurantielles. *Revue Responsabilité civile et Assurances*.
3. A.Charpentier & Flachaire (2021). Pareto Models for Top Incomes and Wealth. *Journal of Economic Inequality*, doi:10.1007/s10888-021-09514-6 
4. A.Charpentier, M. James* & H. Ali (2021). Predicting Drought and Subsidence Risks in France, *Natural Hazards and Earth System Sciences*, doi:10.5194/nhess-2021-214
5. A.Charpentier, M. Denuit & J. Trufin (2021). Autocalibration and Tweedie-dominance for Insurance Pricing with Machine Learning. *Insurance: Mathematics and Economics*, 10.1016/j.insmatheco.2021.09.001 
6. A. Barry*, A.Charpentier & K. Oualkacha (2021) A new GEE method to account for heteroscedasticity, using asymmetric least-square regressions. *Journal of Applied Statistics* doi:10.1080/02664763.2021.1957789
7. A.Charpentier, R. Élie & C. Remlinger* (2021) Reinforcement Learning in Economics and Finance. *Computational Economics*, doi:10.1007/s10614-021-10119-4
8. A.Charpentier, L. Barry & M. James* (2021) Insurance against Natural Catastrophes: Balancing Actuarial Fairness and Social Solidarity. *Geneva Papers on Risk & Insurance*, doi:10.1057/s41288-021-00233-7 
9. 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 
10. A.Charpentier, R. Élie, M. Laurière⁺ & 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
11. L. Barry & A.Charpentier (2020) Personalization as a Promise: Can Big Data Change the Practice of Insurance?. *Big Data & Society*. doi:10.1177/2053951720935143
12. A.Charpentier & E. Gallic⁺ (2020) Can historical demography benefit from the collaborative data of genealogy websites?. *Population*, doi:10.3917/popu.2002.0391 
13. A.Charpentier & E. Gallic⁺ (2019) Using collaborative genealogy data to study migration: a research note. *The History of the Family*, doi:10.1080/1081602X.2019.1641130

*: graduate student; ⁺: post doc

14. A.Charpentier, N., Ka*, S. Mussard & O.H. Ndiaye (2019) Gini Regressions and Heteroskedasticity. *Econometrics*, 7, doi:10.3390/econometrics7010004
15. A.Charpentier, E. Flachaire & A. Ly* (2018) Econometrics and Machine Learning. *Economics & Statistics*, doi:10.24187/ecostat.2018.505d.1970
16. A.Charpentier & B. Coulmont (2018) We are not alone ! (at least, most of us) *Significance*, doi:10.1111/j.1740-9713.2018.01108.x 
17. A.Charpentier, A. David* & R. Élie (2017) Optimal Claiming Strategies in Bonus Malus Systems and Implied Markov Chains. *Risks*, doi:10.3390/risks5040058
18. 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
19. G.Geenens, A.Charpentier & D.Paindaveine (2017) Probit transformation for nonparametric kernel estimation of the copula density. *Bernoulli* doi:10.3150/15-BEJ798
20. 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
21. 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 
22. A.Charpentier & E.Flachaire (2015) Log-transform kernel density estimation of income distribution. *Actualité Economique*, 91 :141-149, doi:10.7202/1036917ar
23. C. Tavéra, J.-C. Poutineau, J.-S. Pentecôte, I. Cadoret-David, A.Charpentier, C. Guéguen, M. Huchet-Bourdon, J. Licheron* & G. L'Oeillet* (2015) The "Mother of All Puzzles" at thirty: a meta-analysis. *International Economics*, 141 :80-96, doi:10.1016/j.inteco.2015.01.001
24. M.T.Bastos, A.Charpentier & D.Mercea (2015) Tents, Tweets, and Events: The Interplay Between Ongoing Protests and Social Media. *Journal of Communication*, 65: 320–350, doi:10.1111/jcom.12145
25. 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
26. A.Charpentier, M.Durand* (2015) Modeling earthquake dynamics. *Journal of Seismology*, 19: 721-739, doi:10.1007/s10950-015-9489-9
27. 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
28. A.Charpentier & S.Mussard (2011) Income Inequality Games. *Journal of Economic Inequality*, 9: 529–554, 20 doi:10.1007/s10888-011-9184-1
29. A.Charpentier (2011) On the return period of the 2003 heat wave. *Climatic Change*, 109: 245–260, doi:10.1007/s10584-010-9944-0
30. A.Charpentier & A.Oulidi+ (2010) Beta kernel quantile estimators of heavy-tailed loss distributions. *Statistics and Computing*, 20: 35–55, doi:10.1007/s11222-009-9114-2
31. A.Charpentier & A.Oulidi+ (2009) Estimating allocations for value-at-risk portfolio optimization. *Mathematical Methods of Operations Research*, 69: 395, doi:10.1007/s00186-008-0244-7

32. 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)
33. 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)
34. 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)
35. A.Charpentier (2008) Dynamic dependence ordering for Archimedean copulas and distorted copulas. *Kybernetika*, [doi:10.3338/dmlcz/135890](https://doi.org/10.3338/dmlcz/135890)
36. 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)
37. 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)
38. 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)
39. 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)
40. A.Charpentier (2006) Actuariat et data mining: prise en compte des dépendances. *Revue des Nouvelles Technologies de l'Information*, [isbn:978-2-85428-794-3](https://doi.org/10.1007/978-2-85428-794-3)

Books

41. G. Bénéplanc, A.Charpentier & P. Thourot (2022). Manuel de l'Assurance. Presses Universitaires de France. *to appear*
42. A.Charpentier (2014). Computational Actuarial Science with R. CRC Press. [ISBN 9781138033788](https://doi.org/10.1007/9781138033788), R Casdataset package 
43. A.Charpentier & C. Dutang (2013). Actuariat avec R. CRAN.
44. M.Denuit & A.Charpentier (2005) Mathématiques de l'assurance non-vie - Tarification et provisionnement (Tome 2). Economica. [ISBN 9782717848601](https://doi.org/10.1007/9782717848601)
45. M.Denuit & A.Charpentier (2004) Mathématiques de l'assurance non-vie - Principes fondamentaux de théorie du risque (Tome 1). Economica. [ISBN 9782717848540](https://doi.org/10.1007/9782717848540)
46. Collective Actuarial Community Loss Data Analytics. An open text authored by the Actuarial Community. 2019. <https://ewfrees.github.io/Loss-Data-Analytics/>

Published papers in French & Dissemination papers

47. A.Charpentier (2022) Modéliser la contagion. *Risques*
48. A.Charpentier (2022) Le tabou de l'exponentielle. *Risques*
49. A.Charpentier (2021) Assurance et discrimination, quel rôle pour les actuaires ? *Risques*

50. A.Charpentier & E.Gallic (2021) Intelligence collective et données. *Risques* pdf
51. A.Charpentier (2021) Un double centenaire : Treatise on probabilities de John Maynard Keynes et Risk, Uncertainty and Profit de Frank Knight. *Variance.eu* pdf
52. A.Charpentier (2021) Une mesure ne peut être un objectif. *Risques* pdf
53. A.Charpentier & L.Barry (2020) Concilier risques collectifs et décisions individuelles. *Risques* pdf
54. A.Charpentier, L.Barry & E.Gallic (2020) Quel avenir pour les probabilités prédictives en assurance ? *Annales des Mines* doi:10.3917/rindu1.201.0074 pdf
55. A.Charpentier (2020) Big Data, GAFA et assurance. *Annales des Mines* doi:10.3917/rindu1.201.0053 pdf
56. R.Bigot & A.Charpentier (2019) Repenser la responsabilité, et la causalité. *Risques* pdf
57. A.Charpentier (2019) Les autorités publiques face aux risques, de la confiance au doute. *Risques*, 119.
58. A.Charpentier & B.Cherrier (2019) La valeur de la vie. *Risques*, 118 pdf
59. A.Charpentier (2019) Les classes de risques vont-elles plus loin que les stéréotypes?. *L'actuariat*, 32 pdf.
60. A.Charpentier (2019) Du pari au "marché prédictif". *Variance.eu* pdf
61. A.Charpentier (2019) Petite histoire des paris sportifs. *Variance.eu* pdf
62. A.Charpentier (2018) Les réseaux pour réinventer l'assurance ? *Risques* pdf
63. A.Charpentier (2018) Histoire du hasard et de la simulation. *Risques*, 116 pdf
64. A.Charpentier (2018) La représentation cartographique des villes. *Variance.eu*, pdf
65. A.Charpentier (2018) Fake news, post-truth, Wikipedia et blockchain : vérité et consensus. *Risques*, 115, pdf
66. A.Charpentier (2018) L'intelligence artificielle dilue-t-elle la responsabilité ?. *Risques*, 114, pdf
67. A.Charpentier (2018) Les modèles prédictifs peuvent-ils être loyaux et justes. *Risques*, 113, pdf
68. A.Charpentier (2017) L'éthique de la modélisation dans un monde où la normalité n'existe plus. *Risques*, 112, pdf
69. A.Charpentier (2017) Les marchés prédictifs comme technique de prévision. *Risques*, 111, pdf
70. Antonio, K. & A.Charpentier (2017) La tarification par genre en assurance, corrélation ou causalité ?. *Risques*, 110, pdf
71. A.Charpentier (2017) Les dérives du principe de précaution. *Risques*, 108, pdf
72. A.Charpentier & T. Renault*(2016). Les promesses de la blogosphère économique. *L'Économie Politique*, 72:4, 10.3917/leco.072.0080



73. A.Charpentier & R.Suire (2016) Données et santé: valeurs, acteurs et santé. *Risques*, 107, [pdf](#)
74. A.Charpentier (2016) Fibonacci, les lapins, le nombre d'or et les calculs actuariels. *Risques*, 106, [pdf](#)
75. A.Charpentier (2016) La guerre des étoiles: distinguer le signal et le bruit. *Risques*, 105, [pdf](#)
76. A.Charpentier, A.Eyraut-Loisel, A. Hannart, & J. Tomas⁺ (2015) Changement Climatique et Assurance. *Variations*, 54, [pdf](#)
77. A.Charpentier & B.Cherrier (2015) 'Mathiness' et Assurance. *Risques*, 104, [pdf](#)
78. A.Charpentier, M.Denuit & R.Elle (2015) Segmentation et Mutualisation, les deux faces d'une même pièce. *Risques*, 103, [pdf](#)
79. A.Charpentier & A.Diogo* (2015) Barry Big data : passer d'une analyse de corrélation à une interprétation causale. *Risques*, 101, [pdf](#)
80. A.Charpentier (2015) Interprétation, intuition et probabilités. *Risques*, 99.
81. A.Charpentier (2014) De la difficulté de faire des prévisions (quand on a peu de données). *Risques*, 98.
82. B.Coulmont, A.Charpentier & J.Gombin (2014) Un homme, deux voix : le vote par procuration. *La Vie des Idées*, 11 février 2014 [hal:00945233](#)
83. A.Charpentier (2014) La loi des petits nombres. *Risques*, 97, [pdf](#)
84. A.Charpentier (2014) L'efficience des marchés : hypothèse de modèle ou fait stylisé?. *Risques*, 96, [pdf](#)
85. A.Charpentier (2011) La loi des grands nombres et le théorème central limite comme base de l'assurabilité ? *Risques*, 86, [pdf](#)

Chapters & Participations

86. A.Charpentier (2021) Changement Climatique et Assurance. *in* Impact du changement climatique, E. Challier Ed., Pommier Éditions.
87. A.Charpentier & R.Bigot (2021) Le rôle des actuaires. *in* Le droit des assurances en tableaux, R.Bigot & A.Cayol Ed., Ellipses Éditions.
88. 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](#)
89. A.Charpentier & M.Denuit (2020) On limits for machine learning algorithms in insurance *in* Insurance data analytics, F.Planchet & C.Y.Robert Ed., Economica.
90. A.Charpentier (2020) Prédiction avec des copules en finance *in* Prévisions en Finance, Charles, Darne & Ferrara Eds., Economica [hal:01151233](#)
91. 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](#) [pdf](#)

92. A.Charpentier (2018) Central Limit Theorem *in* The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation, B. Frey Ed., SAGE.
[doi:10.4135/9781506326139.n105](https://doi.org/10.4135/9781506326139.n105)
93. A.Charpentier & R.Kaas (2014) Introduction *in* Computational Actuarial Science With R, Charpentier, A. Eds. CRC Press.
94. A.Charpentier & S.Tufféry (2014) Statistical Learning *in* Computational Actuarial Science With R, Charpentier, A. Eds. CRC Press.
95. B.Escoto & A.Charpentier (2014) Bayesian Philosophy *in* Computational Actuarial Science With R, Charpentier, A. Eds. CRC Press.
96. A.Charpentier (2014) Modèles statistiques du risque en assurance *in* Statistique du Risque, Dreesbeke, Maumy-Bertrand, Saporta & Thomas-Agnan Eds. Technip [pdf](#)
97. A.Charpentier (2014) Copules et Risques Multiples *in* Statistique du Risque, Dreesbeke, Maumy-Bertrand, Saporta & Thomas-Agnan Eds. Technip [pdf](#)
98. A.Charpentier (2014) Mesures de Risques *in* Statistique du Risque, Dreesbeke, Maumy-Bertrand, Saporta & Thomas-Agnan Eds. Technip [pdf](#)
99. A.Charpentier, J.D.Fermanian & O.Scaillet (2006) The estimation of copulas: Theory and practice. *in* Copula Methods *in* Derivatives and Risk Management: From Credit Risk to Market Risk, Rank, J. Eds. Risks. [pdf](#)








Working Paper & in Progress

100. L.Barry & A.Charpentier (2022) L'équité de l'apprentissage machine en assurance. [HAL:03561709](https://hal.archives-ouvertes.fr/hal-03561709)
101. L.Barry & A.Charpentier (2022) The Fairness of Machine Learning in Insurance: New Rags for an Old Man?.
102. M. Hassan*, A.Charpentier & N. Sakr (2022). Government Intervention in Catastrophe Insurance Markets: A Reinforcement Learning Approach. [arXiv:2207.01010](https://arxiv.org/abs/2207.01010)
103. A.Charpentier (2022). Biais, discrimination et assurance. *Institut Louis Bachelier Working Papers*
104. A.Charpentier, Q.S. Guo⁺ & M. Ludkovski (2021) Patterns and Anomalies of Loss Development in P&C Insurance Market.
105. A.Barry & A.Charpentier (2021) Temporal Evolution of Birth Weight Paradox.
106. E.Belz*, A.Charpentier, & P.Y. Geoffard (2021) To sue or not to sue.
107. V.Grari* , A.Charpentier, S. Lamprier & M. Detyniecki (2021). A fair pricing model via adversarial learning. [arXiv:2202.12008](https://arxiv.org/abs/2202.12008) 
108. A.Charpentier, L. Kouakou, M. Löwe, P. Ratz & F. Vermet (2021). Collaborative Insurance Sustainability and Network Structure. [arXiv:2103.03635](https://arxiv.org/abs/2103.03635) 
109. O. Cabrignac, A.Charpentier & E. Gallic (2020) Modeling Joint Lives within Families. [arXiv:2006.08446](https://arxiv.org/abs/2006.08446)
110. A.Charpentier, A. Galichon & L. Vernet*(2019) Optimal transport on large networks a practitioner guide. [arXiv:1907.02320](https://arxiv.org/abs/1907.02320) 

111. E. Belz* & A.Charpentier (2019) Données Agrégées et Variables Compositionnelles : Note Méthodologique. [hal:2097031](https://hal.archives-ouvertes.fr/hal-02097031)
112. A.Charpentier & E. Flachaire (2019) Extended Scale-Free Networks. [arXiv:1905.10267](https://arxiv.org/abs/1905.10267)
113. A.Charpentier (2018) An introduction to multivariate and dynamic risk measures. [hal:01831481](https://hal.archives-ouvertes.fr/hal-01831481)
114. A. Barry*, K. Oualkacha & A.Charpentier (2017) Weighted asymmetric least squares regression for longitudinal data using GEE. [arXiv:1810.09214](https://arxiv.org/abs/1810.09214)
115. A. Barry*, A.Charpentier & K. Oualkacha Quantile and Expectile (2016) Regression for random effects model . [hal:01421752](https://hal.archives-ouvertes.fr/hal-01421752)
116. M.Boudreault & A.Charpentier (2011) Multivariate integer-valued autoregressive models applied to earthquake counts. [arXiv:1112.0929](https://arxiv.org/abs/1112.0929)
117. A.Charpentier (2010) Reinsurance, ruin and solvency issues: some pitfalls. [hal:00463381](https://hal.archives-ouvertes.fr/hal-00463381)
118. A.Charpentier & D.Causeur (2010) Large-scale significance testing of the full Moon effect on deliveries [hal:00482743](https://hal.archives-ouvertes.fr/hal-00482743)
119. A.Charpentier (2008) Pricing catastrophe options in incomplete markets . [citeseerx:10.1.1.572.4606](https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.572.4606)

Teaching

Selected courses

Introduction to data science and artificial intelligence  	INF7100 2020
<i>Université du Québec à Montréal, Canada</i>	
Data Science for Actuaries  	ACT6100 2020
<i>Université du Québec à Montréal, Canada</i>	
Applied Linear Models  	STT5100 2018,2019,2020,2022
<i>Université du Québec à Montréal, Canada</i>	
Statistics 	MAT4681 2022
<i>Université du Québec à Montréal, Canada</i>	
Regression	MAT7381 2020
<i>Université du Québec à Montréal, Canada</i>	
Non-life insurance mathematics	2015, 2016, 2017
<i>ENSAE, Paris, France</i>	
Networks and flows	2017
<i>Université de Rennes 1</i>	
Welfare and inequalities	2016,2017, 2018
<i>Université de Rennes 1</i>	
Time Series	MAT8181 2014
<i>Université du Québec à Montréal, Canada</i>	
Copulas and Extreme Values	MAT8595 2014
<i>Université du Québec à Montréal, Canada</i>	
YouTube channel	since 2020
<i>Courses ~ 42,000 views</i>	

Summer schools

Econometrics and Machine Learning <i>Società Italiana di Econometria (SIdE), Italy</i>	2019
Insurance Data Science: Use and Value of Unusual Data <i>Summer School of the Swiss Association of Actuaries, Lausanne, Switzerland</i>	2019
Econometrics and Machine Learning <i>Università degli studi dell'Insubria, Italy</i>	2018
Econometrics and Machine Learning <i>Universitat de Barcelona, Spain</i>	2018

Other Institutions

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

Professional training

Data Science for Actuaries <i>Institut des Actuaires</i>	Paris, France 2015-2018
Data Science & Machine Learning for Actuaries <i>AXA Group</i>	Istanbul, Singapore & Paris 2015
Machine Learning for Insurance <i>MAIF Insurance</i>	Niort, France 2014
Natural Catastrophes & Cat Bonds <i>AXA Group</i>	Paris, France 2007
R for Actuarial Science <i>AXA & Caritat (professional training)</i>	Paris, France 2006-2007