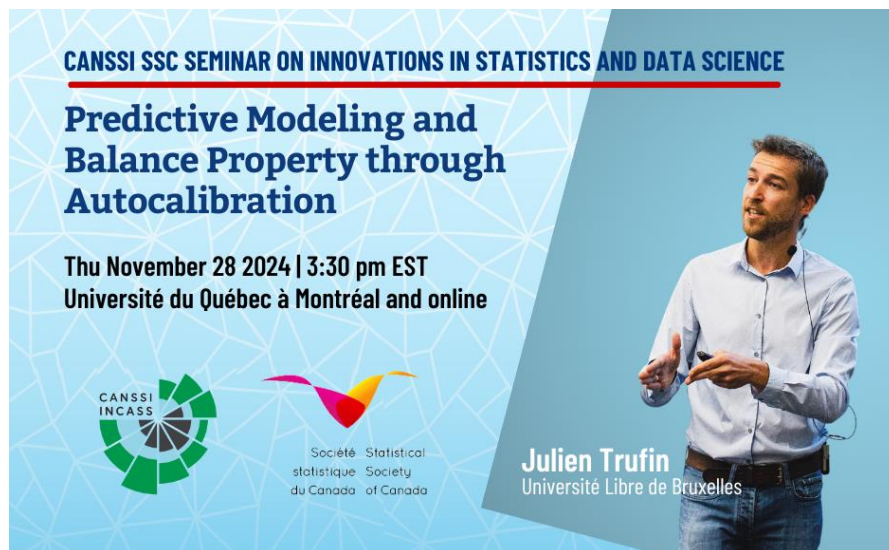


CANSSI SSC Seminar: Predictive Modeling and Balance Property through Autocalibration

November 28 | 3:30 pm–4:30 pm EST



Date: Thursday, November 28, 2024

Time: 3:30–4:30 p.m. ET

Location: Université du Québec à Montréal, Pavillon Président Kennedy, 201, Av. Président Kennedy, PK-5115, Montréal (Métro Place des Arts) and online

This hybrid talk by Julien Trufin (Université Libre de Bruxelles, Belgium) is part of the CANSSI SSC Seminar on Innovations in Statistics and Data Science, a new series co-sponsored by CANSSI and the Statistical Society of Canada that brings distinguished researchers in statistical sciences to CANSSI member universities across Canada. The series promotes interactions between leading researchers and statistical sciences faculty members and students, particularly at smaller institutions.

This event is hosted by the Centre de recherche facultaire en statistique et science des données (STATQAM) at Université du Québec à Montréal. We invite you to join the presentation in person or online.

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About the Presentation

Machine learning techniques provide actuaries with predictors exhibiting high correlation with claim frequencies and severities. However, these predictors generally fail to achieve financial equilibrium and thus do not qualify as pure premiums. Autocalibration effectively addresses this issue since it ensures that every group of policyholders paying the same premium is on average self-financing. This talk proposes to look at recent results concerning autocalibration. In particular, we present a new characterization of autocalibration which enables us to identify whether a predictor is autocalibrated or not, we study a method (called balance correction) for obtaining an autocalibrated predictor from any regression model, we highlight the effect of balance correction

on resulting pure premiums, and finally we go through some performance criteria that are particularly relevant for autocalibrated predictors.

About the Presenter

Julien Trufin has been a Professor of Actuarial Science in the Department of Mathematics at the Université Libre de Bruxelles (ULB) since 2023. He was an Associate Professor between 2014 and 2023 in the same department. Previously, he was an Assistant Professor between 2012 and 2014 at Université Laval in Quebec, Canada. His main research fields are:

- Risk classification: insurance pricing and machine learning techniques
- Loss reserving: collective and individual methods
- Credibility theory
- Stochastic inequalities: stochastic orders and dependence concepts
- Risk measures
- Ruin theory

He is an editor for two international journals:

- Co-Editor of the *European Actuarial Journal* (2021–present);
- Associate Editor of *ASTIN Bulletin: The Journal of the International Actuarial Association* (2018–present).

He also served as Associate Editor of *Methodology and Computing in Applied Probability* from 2015 to 2024.