ISBA | Louvain Institute of Data Analysis and Modeling in economics and statistics

ISBA
Key Facts and Figures

Academic Year 2018-2019
(September 2018 – August 2019)

UCLouvain

Institute of Statistics, Biostatistics and Actuarial Sciences

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Academic Year 2018-2019

Research activity continued to flourish at ISBA during the academic year 2018-2019. Research programs conducted by ISBA members lead to publications in top actuarial and statistical journals, as well as in related fields (mathematical economics, operations research, or mathematical finance, for instance). Precisely, **ISBA members published 54 papers** (ref. RP2018/31-RP2019/42) in international refereed journals. Research to appear soon, or under evaluation, was reported in **29 discussion papers** (ref. DP2018/26-DP2019/19).

ISBA members are involved in editorial boards of reference journals in their respective fields, including

- A*nnals of Statistics*, *Bernoulli*, *Computational Statistics and Data Analysis*, *Electronic Journal of Statistics*, *Extremes* and *Statistical Modelling in probability and statistic*s;
- *Biometrika*, *Biometrics* and *Biostatistics*;
- *Econometrics and Statistics*, *Journal of Risk and Financial Management*, *Studies in Nonlinear Dynamics and Econometrics*, *Econometrics*, *Journal of Business and Economic Statistics* and *Digital Finance;*
- *ASTIN Bulletin* and *Insurance: Mathematics and Economics.*

They also regularly act as reviewers for international, peer-reviewed journals. This is a clear mark that their expertise is recognized worldwide. Besides fundamental research, ISBA members are also very **active in addressing societal issues** such as sustainability of pension systems and insurability of long-term cancer survivors.

Training junior researchers is a key activity for ISBA senior academic members. In 2018-2019, **ISBA has hosted 25 PhD students and 3 post-doc researchers**. Three students successfully defended their PhD thesis and were awarded the degree of Doctor in Science, orientation Statistics or Actuarial Science.

ISBA welcomed 25 visitors from all around the world. **Most of them presented their research results at the regular ISBA seminars**, in the statistics series or in the actuarial series. There have been 9 such seminars in 2018-2019. **Two scientific events were also organized** : a one-day workshop on «Alternatives to the Proportional Hazards Modeling in Cancer Drug Development» and a two-day workshop on «Fair Valuation in Insurance». Also, there have been **17 Applied Statistics workshops** focusing on problem-driven statistics organized at ISBA and **two short courses** devoted to high-dimensional statistics (by Eugen Pircalabelu, ISBA member) and to frontier models in production econometrics and extreme value theory in risk handling (by Abdelaati Daouia, from Toulouse School of Economics).

Contents

1. Publications

1.1. Reprints (54 publications)

1. Alonso-García, Jennifer; Devolder, Pierre. Continuous time model for notional defined contribution pension schemes: Liquidity and solvency. In: Insurance: Mathematics and Economics, Vol. 88, p. 57-76 (2019). http://hdl.handle.net/2078.1/216684

2. Amico, Maïlis; Van Keilegom, Ingrid; Legrand, Catherine. The Single-Index/Cox Mixture Cure Model. In: Biometrics, Vol. 75, p. 452-462 (2019). http://hdl.handle.net/2078.1/214788

3. Asmussen, Soren; Ivanovs, Jevgenijs; Segers, Johan. On the longest gap between power-rate arrivals. In: Bernoulli : a journal of mathematical statistics and probability, Vol. 25, no. 1, p. 375-394 (2019). http://hdl.handle.net/2078.1/191354

4. Barbieri, Antoine; Legrand, Catherine. Joint longitudinal and time-to-event cure models for the assessment of being cured.. In: Statistical methods in medical research, Vol. to appear (Accepted author version posted online: 2019 Jun 19) (2019), p. to appear (2019). http://hdl.handle.net/2078.1/219923

5. Beretta, Alessandro; Heuchenne, Cédric. Variable selection in proportional hazards cure model with time-varying covariates, application to US bank failures. In: Journal of Applied Statistics, Vol. 46, no. 9, p. 1529-1549 (2019). http://hdl.handle.net/2078.1/208979

6. Bertrand, Aurélie; Van Keilegom, Ingrid; Legrand, Catherine. Flexible parametric approach to classical measurement error variance estimation without auxiliary data : Classical Measurement Error Variance Estimation. In: Biometrics, Vol. 75, no. 1, p. 297-307 (2019). http://hdl.handle.net/2078.1/214798

7. Burny, Wivine; Marchant, Arnaud; Hervé, Caroline; Callegaro, Andrea; Caubet, Magalie; Fissette, Laurence; Gheyle, Lien; Legrand, Catherine; Ndour, Cheikh; Tavares Da Silva, Fernanda; van der Most, Robbert; Willems, Fabienne; Didierlaurent, Arnaud M.; Yarzabal, Juan. Inflammatory parameters associated with systemic reactogenicity following vaccination with adjuvanted hepatitis B vaccines in humans. In: Vaccine, Vol. 37, no.14, p. 2004-2015 (2019). http://hdl.handle.net/2078.1/214777

8. Badin, Luiza; Daraio, Cinzia; Simar, Léopold. A Bootstrap Approach for Bandwidth Selection in Estimating Conditional Efficiency Measures. In: European Journal of Operational Research, Vol. 277, p. 784-797 (2019). http://hdl.handle.net/2078.1/214611

9. Callegaro, Andrea; Ndour, Cheikh; Aris, Emmanuel; Legrand, Catherine. A note on tests for relevant differences with extremely large sample sizes. In: Biometrical Journal, Vol. 61, no.1, p. 162-165 (2019). http://hdl.handle.net/2078.1/214790

10. Chau, Van Vinh; Ombao, Hernando; von Sachs, Rainer. Intrinsic data depth for Hermitian positive definite matrices. In: Journal of Computational and Graphical Statistics, Vol. 28, no. 2, p. 427-439 (2019). http://hdl.handle.net/2078.1/208820

11. Chiapino, Maël; Sabourin, Anne; Segers, Johan. Identifying groups of variables with the potential of being large simultaneously. In: Extremes, Vol. 22, no. 2, p. 193-222 (2019). http://hdl.handle.net/2078.1/211880

12. Christiansen, Marcus; Denuit, Michel; Lucas, Nathalie; Schmidt, Jan-Philipp. Projection models for health expenses. In: Annals of Actuarial Science, Vol. 12, no.1, p. 185-203 (2018). http://hdl.handle.net/2078.1/203967

13. Daniel, Betty; Hafner, Christian; Manner, Hans; Simar, Léopold. Asymmetries in Business Cycles and the Role of Oil Prices. In: Macroeconomic Dynamics, Vol. 23, p. 1622-1648 (2019). http://hdl.handle.net/2078.1/187200

14. Daraio, Cinzia; Simar, Léopold; Wilson, Paul W. Fast and efficient computation of directional distance estimators. In: Annals of Operations Research, Vol. https://doi.org/10.1007/s10479-019-03163-9 (2019). http://hdl.handle.net/2078.1/214604

15. Denuit, Michel. Size-biased transform and conditional mean risk sharing, with application to P2P insurance and tontines. In: ASTIN Bulletin, Vol. 49, no.03, p. 591-617 (2019). http://hdl.handle.net/2078.1/219794

16. Denuit, Michel; Guillen, Montserrat; Trufin, Julien. Multivariate credibility modelling for usage-based motor insurance pricing with behavioural data. In: Annals of Actuarial Science, Vol. 13, no.2, p. 378-399 (2019). http://hdl.handle.net/2078.1/219795

17. Denuit, Michel; Hainaut, Donatien; Trufin, Julien. Effective Statistical Learning Methods for Actuaries I : GLMs and Extensions. Springer: Springer Nature Switzerland AG 2019, 2019. 441 pages. http://hdl.handle.net/2078.1/219796

18. Denuit, Michel; Lucas, Nathalie; Pitacco, Ermanno. Pricing and Reserving in LTC Insurance. In: Actuarial Aspects of Long Term Care (Springer Actuarial book series (SPACT), Springer , 2019, p. 129-158. http://hdl.handle.net/2078.1/216511

19. Denuit, Michel; Trufin, Julien. Des tables de mortalité, espérances de vie, durées de vie moyennes et probables et de leur bon usage dans l'évaluation des droits viagers. In: Revue du Notariat Belge, Vol. 3142, p. 574-608 (2019). http://hdl.handle.net/2078.1/219792

20. Denuit, Michel; Vernic, Raluca. Bivariate Bernoulli Weighted Sums and Distribution of Single-Period Tontine Benefits. In: Methodology and Computing in Applied Probability, Vol. 20, no.4, p. 1403-1416 (2018). http://hdl.handle.net/2078.1/207299

21. Escanciano, Juan Carlos; Pardo-Fernandez, Juan Carlos; Van Keilegom, Ingrid. Asymptotic distribution-free tests for semiparametric regressions with dependent data. In: Annals of Statistics, Vol. 46, no. 3, p. 1167-1196 (2018). http://hdl.handle.net/2078.1/185665

22. Faraz, Alireza; Heuchenne, Cédric; Saniga, Erwin. An exact method for designing Shewhart and S2 control charts to guarantee in-control performance. In: International Journal of Production Research, Vol. 56, no.7, p. 2570-2584 (2018). http://hdl.handle.net/2078.1/207879

23. Feraud, Baptiste; Leenders, Justine; Martineau, Estelle; Giraudeau, Patrick; Govaerts, Bernadette; de Tullio, Pascal. Two data pre-processing workflows to facilitate the discovery of biomarkers by 2D NMR metabolomics. In: Metabolomics, Vol. 15, no. 63 (2019).
http://hdl.handle.net/2078.1/215784

24. Gorrostieta, Cristina; Ombao, Hernando; von Sachs, Rainer. Time-Dependent Dual-Frequency Coherence in Multivariate Non-Stationary Time Series. In: Journal of Time Series Analysis, Vol. 40, p. 3-22 (2019).
http://hdl.handle.net/2078.1/203145

25. Guisset, Séverine; Martin, Manon; Govaerts, Bernadette. Comparison of PARAFASCA, AComDim, and AMOPLS approaches in the multivariate GLM modelling of multi-factorial designs. In: Chemometrics and Intelligent Laboratory Systems, Vol. 184, p. 44-63 (2019).
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26. Haedo, Christian; Mouchart, Michel. A stochastic independence approach for measuring regional specialization and concentration. In: Papers in Regional Science, Vol. 97, no. 4, p. 1151-1168 (2018).
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27. Hafner, Christian. Testing for Bubbles in Cryptocurrencies with Time-Varying Volatility. In: Journal of Financial Econometrics, no. nby023, p. 1-17 (2018).
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28. Hainaut, Donatien. A self-organizing predictive map for non-life insurance. In: European Actuarial Journal, Vol. Ausgabe 1 (2019).
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29. Hainaut, Donatien. Hedging of crop harvest with derivatives on temperature. In: Insurance: Mathematics and Economics, Vol. 84, p. 98-114 (2019).
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30. Hainaut, Donatien. Calendar spread exchange options pricing with Gaussian random fields. In: Risks, Vol. 6, no. 3, p. 77 (2018).
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31. Hainaut, Donatien; Deelstra, Griselda. A Self-Exciting Switching Jump Diffusion: properties, calibration and hitting time.. In: Quantitative Finance, Vol. 19, no. 3, p. 407-426 (2019).
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32. Hainaut, Donatien; Deelstra, Griselda. A Bivariate Mutually-Excited Switching Jump Diffusion (BMESJD) for Asset Prices. In: Methodology and Computing in Applied Probability, Vol. 21, no. 4, p. 1337-1375 (2019).
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34. Hainaut, Donatien; Moraux, Franck. Hedging of options in presence of jump clustering. In: The Journal of Computational Finance, Vol. 22, no. 3, p. 1-35 (2018).
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35. Hainaut, Donatien; Moraux, Franck. A switching self-exciting jump diffusion process for stock prices. In: Annals of Finance, Vol. 15, no. 2, p. 267-306 (2019).
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36. Haine, Thomas; Segers, Johan; Flandre, Denis; Bol, David. Gradient Importance Sampling: an Efficient Statistical Extraction methodology of High-Sigma SRAM Dynamic Characteristics. In: 2018 Design, Automation Test in Europe Conference Exhibition (PROCEEDINGS), 2018, 195-200.
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37. Hanbali, Hamza; Denuit, Michel; Dhaene, Jan; Trufin, Julien. A dynamic equivalence principle for systematic longevity risk management. In: Insurance: Mathematics and Economics, Vol. 86, p. 158-167 (2019).
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38. Kiriliouk, Anna; Segers, Johan; Tafakori, Laleh. An estimator of the stable tail dependence function based on the empirical beta copula. In: Extremes, Vol. 21, no. 4, p. 581-600 (2018).
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39. Lambert, Philippe; Bremhorst, Vincent. Estimation and identification issues in the promotion time cure model when the same covariates influence long- and short-term survival. In: Biometrical Journal, Vol. 61, no. 2, p. 275-289 (2019).
http://hdl.handle.net/2078.1/209408

40. Manteiga, Wenceslao González; Heuchenne, Cédric; Sellero, César Sánchez; Beretta, Alessandro. Goodness-of-fit tests for censored regression based on artificial data points. In: TEST (2019).
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41. Najafi, Nadia; Veyckemans, Francis; Vanhonacker, Domien; Legrand, Catherine; Van de Velde, Anne; Vandenplas, Yvan; Poelaert, Jan. Incidence and risk factors for adverse events during monitored anaesthesia care for gastrointestinal endoscopy in children: A prospective observational study.. In: European journal of anaesthesiology, Vol. 36, no.6, p. 390-399 (2019).
http://hdl.handle.net/2078.1/219850

42. Nguyen, Huu Du; Tran, Kim Phuc; Heuchenne, Cédric. Monitoring the ratio of two normal variables using variable sampling interval exponentially weighted moving average control charts. In: Quality and Reliability Engineering International, Vol. 35, p. 439-460 (2019).
http://hdl.handle.net/2078.1/207880

43. Nicolaie, Mioara Alina; Taylor, Jeremy M. G.; Legrand, Catherine. Vertical modeling: analysis of competing risks data with a cure fraction. In: Lifetime Data Analysis, Vol. 25, no.1, p. 1-25 (2019).
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44. Pechon, Florian; Denuit, Michel; Trufin, Julien. Multivariate modelling of multiple guarantees in motor insurance of a household. In: European Actuarial Journal, Vol. 9, p. 575-602 (2019).
http://hdl.handle.net/2078.1/216579

45. Pechon, Florian; Trufin, Julien; Denuit, Michel. Multivariate modelling of household claim frequencies in motor third-party liability insurance. In: ASTIN Bulletin, Vol. 48, no.3, p. 969-993 (2018).
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46. Portier, François; Segers, Johan. Monte Carlo integration with a growing number of control variates. In: Journal of Applied Probability, Vol. 56, no. 4, p. 1168-1186 (2019).
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47. Roueff, François; von Sachs, Rainer. Time-frequency analysis of locally stationary Hawkes processes. In: Bernoulli : a journal of mathematical statistics and probability, Vol. 25, no. 2, p. 1355-1385 (2019).
http://hdl.handle.net/2078.1/203144

48. Scolas, Sylvie; Legrand, Catherine; Oulhaj, Abderrahim; El Ghouch, Anouar. Diagnostic checks in mixture cure models with interval-censoring. In: Statistical Methods in Medical Research, Vol. 27, no. 7, p. 2114-2131 (2018). http://hdl.handle.net/2078.1/183240

49. Simar, Léopold; W. Wilson, Paul. Central limit theorems and inference for sources of productivity change measured by nonparametric Malmquist indices. In: European Journal of Operational Research, Vol. 277, no.2, p. 756-769 (2019).
http://hdl.handle.net/2078.1/215489

50. Tran, Kim Phuc; Heuchenne, Cédric; Balakrishnan, Narayanaswamy. On the performance of coefficient of variation charts in the presence of measurement errors. In: Quality and Reliability Engineering International, Vol. 35, p. 329-350 (2019).
http://hdl.handle.net/2078.1/207878

51. Vettori, Sabrina; Huser, Raphaël; Segers, Johan; Genton, Marc G. Bayesian model averaging over tree-based dependence structures for multivariate extremes. In: Journal of Computational and Graphical Statistics, , p. 1-37 (2019). http://hdl.handle.net/2078.1/218809

52. Wang, Cindy Shin-Huei; Hafner, Christian. A simple solution of the spurious regression problem. In: Studies in Nonlinear Dynamics & Econometrics, Vol. 22, no. 3, p. 1-14 (2018).
http://hdl.handle.net/2078.1/196676

53. Zeddouk, Fadoua; Devolder, Pierre. Pricing of Longevity Derivatives and Cost of Capital. In: Risks, Vol. 7(2), no.41, p. 1-29 (2019).
http://hdl.handle.net/2078.1/216695

54. van Loenhout, Joris; Delbiso,Tefera; Kiriliouk, Anna; Rodriguez-Llanes, Jose Manuel; Segers, Johan; Guha-Sapir, Debarati. Heat and emergency room admissions in the Netherlands. In: BMC Public Health, Vol. 18, p. 9 (2018). http://hdl.handle.net/2078.1/193574

1.2. Disussion Papers (29 publications)

1. DP2019/19 - SIMAR, L. and P. WILSON
Hypothesis Testing in Nonparametric Models of Production using Multiple Sample Splits

2. DP2019/18 - ZEDDOUK, F. and P. DEVOLDER
Mean reversion in stochastic mortality : why and how?

3. DP2019/17 - NJIKE LEUNGA, C. and D. HAINAUT
Interbank Credit Risk Modelling with Self-Exciting Jump Processes

4. DP2019/16 - D. HAINAUT
Fractional Hawkes processes

5. DP2019/15 - LELUC, R., PORTIER, F. and J. SEGERS
Control variate selection for Monte Carlo integration

6. DP2019/14 - HAEDO, C. and M. MOUCHART
Two-mode clustering through profiles of regions and sectors.

7. DP2019/13 - PECHON, F., DENUIT, M. and J. TRUFIN
Home and Motor insurance joined at a household level using multivariate credibility

8. DP2019/12 - KIRILIOUK, A., SEGERS, J. AND H. TSUKAHARA
On Some Resampling Procedures with the Empirical Beta Copula

9. DP2019/11 - P. DEVOLDER
Une alternative à la pension à points : le compte individuel pension en euros

10. DP2019/10 - M. DENUIT
Size-biased transform and conditional mean risk sharing, with application to P2P insurance and tontines

11. DP2019/09 - M. DENUIT
Size-biased risk measures of compound sums

12. DP2019/08 - R. VON SACHS
Spectral Analysis of Multivariate Time

13. DP2019/07 - HANBALI, H., CLAASSENS, H., DENUIT, M., DHAENE, J. AND J. TRUFIN
Once covered, forever covered: The actuarial challenges of the Belgian private health insurance system

14. DP2019/06 - DENUIT, M., SZNAJDER, D. AND J. TRUFIN
Model selection based on Lorenz and concentration curves, Gini indices and convex order

15. DP2019/05 - DENUIT, M., MESFOUI, M. AND J. TRUFIN
Concordance-based predictive measures in regression models for discrete responses

16. DP2019/04 - DARAIO, C., SIMAR, L. and P. WILSON
Quality and its impact on efficiency

17. DP2019/03 - WUNSCH, G., MOUCHART, M. and F. RUSSO
La modélisation en sciences sociales: Incertitudes et défis. ISBA Discussion Paper

18. DP2019/02 - WUNSCH, G., MOUCHART, M. and F. RUSSO
Examining Cause-Effect Relations in the Social Sciences A Structural Causal Modelling Approach

19. DP2019/01 - J. SEGERS
One- versus multi-component regular variation and extremes of Markov trees

20. DP2018/35 - TRAN, K. P., HEUCHENNE, C. and B. NARAYANASWAMY
On the performance of coefficient of variation charts in the presence of measurement errors

21. DP2018/34 - NGUYEN, H. D., TRAN, K. P. and C. HEUCHENNE
Monitoring the ratio of two normal variables using variable sampling interval exponentially weighted moving average control charts

22. DP2018/33 - BERETTA, A. and C. HEUCHENNE
Variable selection in proportional hazards cure model with time-varying covariates, application to US bank failures

23. DP2018/32 - DENUIT, M., GUILLEN, M. and J. TRUFIN
Multivariate credibility modeling for usage-based motor insurance pricing with behavioral data

24. DP2018/31 - DE VALK, C. and J. SEGERS
Stability and tail limits of transport-based quantile contours

25. DP2018/30 - GUISSET, S., MARTIN, M. and B. GOVAERTS
Comparison of PARAFASCA, AComDim, and AMOPLS approaches in the multivariate GLM modelling of multi-factorial designs

26. DP2018/29 - KIRILIOUK, A., SEGERS, J. and L. TAFAKORI
An estimator of the stable tail dependence function based on the empirical beta copula

27. DP2018/28 - MARECHAL, P., SIMAR, L. and A. VANHEMS
A mollifier approach to the deconvolution of probability densities

28. DP2018/27 - RUSSO, F., WUNSCH, G. and M. MOUCHART
Causality in the Social Sciences: A structural modelling framework

29. DP2018/26 - HAEDO, C. and M. MOUCHART
Automatic biclustering of regions and sectors

2. People

2.1. PhD students

1. Al-Hassan Hassana
2. Annoye Hugues
3. Asenova Stefka Kirilova
4. Atta Mills Ebenezer
5. Beyene Kassu Mehari
6. Diakite Keivan
7. Feraud Baptiste
8. Gressani Oswaldo
9. Hanna Vanessa
10. Jacquemain Alexandre
11. Ketelbuters John-John
12. Lucas Nathalie
13. Marion Rebecca
14. Martin Manon
15. Mathieu Sophie
16. Mordant Gilles
17. Morsomme Hélène
18. Ngugnie Diffouo Pauline
19. Niyigena Emmanuel
20. Njike Luenga Charles-Guy
21. Pechon Florian
22. Piulachs Xavier
23. Soetewey Antoine
24. Thiel Michel
25. Zeddouk Fadoua

2.2. Post-doc researchers

1. De Backer Mickaël
2. Kyriakopoulou Dimitra
3. Piulachs Xavier

2. 3. Visitors

1. Christian Haedo, CIDETI- Fundacion Observatorio PyME (FOP), Argentina
   15/09/2018 – 04/10/2018, 21-28/05/2019, 21-24/08/2019

2. Yuwei Zhao, Fundan University, Shanghai
   28/09/2018 – 09/10/2018

3. Alois Kneip, University of Bonn, Germany
   30/09/2018 – 06/10/2018

4. Luiza Badin, Bucharest University of Economic Studies, Romania
   01/10/2018 – 09/10/2018

5. Anne Vanhems, Toulouse Business School, France
   29-31/10/2018, 23-26/04/2019

6. Pierre Maréchal, Institut Supérieur de l'Aéronautique et de l'Espace, France
   29-31/10/2018, 23-26/04/2019

7. Paul Wilson, Clemson University, NC, USA
   01-15/12/2018, 27/01-03/02/2019, 10-24/08/2019

8. Taoufik Bouezmarni, University of Sherbrooke, Canada
   01-15/12/2018, 25-28/03/2019

9. François Portier, Télécom ParisTech, France
   16/01/2019 – 19/01/2019

10. John H.J. Einmahl, Tilburg University, The Netherlands
    25-27/02/2019, 13-15/03/2019, 18-20/03/2019, 27-29/03/2019

11. Taoufik Bouezmarni, University of Sherbrooke, Canada
    24/04/2019 – 30/04/2019

12. Eutasio Del Barrio Tellado, Universidad de Valladolid, Spain
    24/04/2019 – 27/04/2019

13. Franck Moraux, Université Rennes 1, France
    22/04/2019 – 26/04/2019

14. Valentin Zelenyuk, University of Queensland, Australia
    15/06/2019 – 22/06/2019

15. Camilla Mastromarco, University of Salento, Italy
    18-22/06/2019, 28/08 – 06/09/2019

16. Andreas Artemiou, Cardiff University, UK
    04/08/2019 – 10/08/2019

2.4. Visitors (Short term/Seminar/Workshop)

1. Victor Panaretos, EPFL
2. Bernard Francq, GlaxoSmithKline
3. Bruno Masquelier, UCLouvain
4. Christophe Dutang, Université Paris Dauphine, France
5. Estate Khmaladze, University of Wellington, NZ
6. Eustasio del Barrio, Universidad de Valladolid, Spain
7. Fabien Francis, Micropole Consulting Belgium
8. Frédéric Thys, SAS
9. Heather Battey, Imperial College London, UK
10. Laurent Gatto, Institut De Duve, UClouvain
11. Marie Gryspeert, Brainstorming
12. Martin Ingram, University of Melbourne, Australia
13. Olayidé Boussari, Université Bourgogne-Franche-Comté, France
14. Paolo Giudici, Fintech laboratory, University of Pavia, Italy
15. Radia Belhocine, Business & Decision
16. Rajen Shah, University of Cambridge, UK
17. Sandra Plancade, INRA, France and ISBA
18. Séverine Guisset (SMCS, UCLouvain)
19. Stephanie Kovalchik, Game Insight Group of Tennis Australia and Victoria University
20. Sylvie Scolas, GlaxoSmithKline
21. Thomas Mikosch, University of Copenhagen, Denmark
22. Valérie Jooste, Université Bourgogne-Franche-Comté, France
23. Vincent Bremhorst, SMCS, UCLouvain
24. Wannes Meert, KUL
25. Xavier Gobert, MyData-Trust

3. Seminars and Workshops

3.1. Seminars

05/10/2018
Statistics seminars
Victor Panaretos, EPFL
«Amplitude and Phase Variation of Point Processes»

09/11/2018
Statistics seminars
Heather Battey, Imperial College London, UK
«Large numbers of explanatory variables»

23/11/2018
Statistics seminars
Sandra Plancade, INRA, France and ISBA
«Survival analysis models for plant development»

07/12/2018
Statistics seminars
Rajen Shah, University of Cambridge, UK
«Low-priced lunch in conditional independence testing»

14/12/2018
Joint CORE/ISBA Finance/Statistics seminars
Estate Khmaladze, University of Wellington, NZ
«New approach to distribution-free testing for linearity of regression. Related topics and extensions»

22/02/2019
Statistics seminars
Eugen Pircalabelu, UCLouvain
«Using vine copulas to estimate the structure of directed acyclical graphs»
Thomas Mikosch, University of Copenhagen, Denmark
«Testing independence of random elements with the distance Covariance»

26/04/2019
Statistics seminars
Eustasio del Barrio, Universidad de Valladolid, Spain
«Central Limit Theorems for Empirical Transportation Cost in General Dimension»

24/05/2019
Statistics seminars
Christophe Dutang, Université Paris Dauphine, France
«Lapse tables for lapse risk management in insurance: a competing risk approach»

3.2. Applied Statistics Workshops

21/09/2018
Frédéric Thys, SAS
Atelier SAS Visual Analytics

12/10/2018
Christian Ritter, ISBA
«Perception and statistical graphics and tabulation» and
«The good, the bad, and the ugly: A collection of statistical graphs and tables found in newspapers, journal articles, and on web pages»

26/10/2018
Wannes Meert, KUL
«Ethics review for an AI research project, a use case»
Xavier Gobert, MyData-Trust
«Post 25th May: what happens next?»

16/11/2018
Valérie Jooste, Université Bourgogne-Franche-Comté, France
«Droit à l'oubli : la définition et l'estimation du délai de guérison après un cancer permettent d'améliorer l'accès à l'emprunt»
Olayidé Boussari, Université Bourgogne-Franche-Comté, France
«Modélisation du risque en excès incluant le délai de guérison comme paramètre»

30/11/2018
Radia Belhocine (Business & Decision) et Séverine Guisset (SMCS, UCLouvain)
«Atelier d'introduction au text mining»

21/12/2018
Stephanie Kovalchik, Game Insight Group of Tennis Australia and Victoria University
« From the Desktop to the Courts: Bringing Statistical Innovation to Professional Tennis»
Martin Ingram, University of Melbourne, Australia
«Gaussian Processes for Paired Comparison Modelling»

08/02/2019

Fabien Francis, Micropole Consulting Belgium

«Les avantages du cloud : Créer et déployer rapidement des modèles de Machine Learning avec Amazon SageMaker»

01/03/2019

Bruno Masquelier, UCLouvain

«Global, regional, and national levels and trends in mortality among older children (5-9) and young adolescents (10-14)»

Marie Gryspeert, Brainstorming

«La business intelligence au service des entreprises au travers d'une exploration stratégique des données»

15/03/2019

Paolo Giudici, Fintech laboratory, University of Pavia, Italy

«Network based credit risk models for Peer to peer lending»

29/03/2019

Bernard Francq and Sylvie Scolas, GlaxoSmithKline

«Equivalence approach in Design of Experiments for robustness evaluation (flatness) with applications in pharmaceutical industry. From univariate t-distribution to multivariate-t distribution for correlated contrasts»

Laurent Gatto, Institut De Duve, UClouvain

«Probabilistic modelling of protein sub-cellular localisation»

03/05/2019

Vincent Bremhorst, SMCS, UCLouvain

«Fertility progression in Germany: An analysis using flexible nonparametric cure survival models»

4. Scientific Events

11/12/2018

Joint UCL-IDDI workshop
Alternatives to the Proportional Hazards Modeling in Cancer Drug Development

Venue : UCLouvain - Place Cardinal Mercier – SOCR-240

21 and 22/03/2019

Workshop « Fair Valuation in Insurance »

Venue : ULB - Campus Plaine – Bâtiment NO – 5e étage – Salle Solvay

Joint UCL-IDDI Workshop

Alternatives to the Proportional Hazards Modeling in Cancer Drug Development

DECEMBER 11, 2018

On-line Registration

Programme

13:00 - 13:15 | Welcome and introduction by Catherine Legrand, ISBA-UCL

13:15 - 14:00 | **Chen Hu, Johns Hopkins University, Baltimore, USA**
«Utility of restricted mean survival time in oncology clinical trials»

14:00 - 14:45 | **Tomasz Burzykowski, UHasselt and IDDI, Belgium**
«Time for a broader use of accelerated failure-time models in cancer clinical trials»

14:45 - 15:15 | *Coffee break*

15:15 - 16:00 | **Catherine Legrand, ISBA-UCL**
«To use a cure model or not, is that the question?»

Venue : UCL
Auditorium SOCRATE
Socrate -240

IDDI UCLouvain ISBA

FNRS PDR ULB-UCLouvain :

Risk Management and Pricing in Finance and Insurance

Workshop « Fair Valuation in Insurance »

March 21-22, 2019

ULB - Campus Plaine – Bâtiment NO – 5e étage – Salle Solvay

(with the support of IABE)

Thursday 21 March 2019

10h00 – 10h20 :	**Registration**
10h20 – 10h30 :	**Welcome**
10h30 – 11h20 :	Antoon Pelsser, Maastricht University, the Netherlands Optimal portfolio choice in incomplete markets
11h20 – 11h50 :	Peter Hieber, Technical University Munich, Germany Valuation of hybrid financial and actuarial products: a universal 3-step method
11h50 – 13h50 :	**Lunch**
13h50 – 14h40:	Michel Vellekoop, Universiteit van Amsterdam, the Netherlands An exact utility indifference valuation method for incomplete markets
14h40 – 15h10:	Manuel Rach, University of Ulm, Germany Optimal retirement products: annuity, tontine, tonuity, antine?
15h10 – 15h40:	**Coffee Break**
15h40 – 16h30:	Anna Rita Bacinello, University of Trieste, Italy, The impact of longevity risk and contractual heterogeneity on the fair valuation of a life insurance portfolio
16h30 – 17h00:	Jenifer Alonso Garcia, University of Groningen, the Netherlands Guarantee valuation in notional defined contribution pension systems

Friday 22 March 2019

09h00 – 09h50 :	Stéphane Loisel, ISFA, Université Lyon 1, France Market inconsistencies of the market-consistent European life insurance economic valuations: pitfalls and practical solutions
09h50 – 10h20 :	Karim Barigou, KU Leuven, Belgium Fair dynamic valuation of insurance liabilities: Merging actuarial judgement with market- and time-consistency
10h20 – 10h50 :	**Coffee Break**
10h50 – 11h40 :	Mogens Steffensen, University of Copenhagen, Denmark Life made simpler: From policy holder behaviour to multi-state forward transition rates
11h40 – 12h10 :	Roberta Melis, University of Sassari, Italy Optimal successive annuitisations after retirement
12h10 – 12h20:	**Closing**

5. Short courses

Short course on : «Introduction to high-dimensional statistics»
by **Eugen Pircalabelu**, ISBA – UCLouvain
04, 11, 18/02/2019

Short course on : «From frontier models in production econometrics to extreme value theory in risk handling»
by **Abdelaati Daouia**, Toulouse School of Economics, at ULB
08-09/04/2019

6. Doctoral Dissertations

AMICO Maïlis
«Cure models in survival analysis : from modelling to prediction assessment of the cure fraction»
Promotor: Ingrid Van Keilegom and Co-Promotor: Catherine Legrand
09/11/2018

FERAUD Baptiste
«Statistical contribution to the analysis of 2D-NMR data and spectra in metabolomic studies»
Promotor: Bernadette Govaerts, Michel Verleysen
10/01/2019

PECHON Florian
«Risk classification of households with multiline P&C insurance claim frequency models»
Promotor: Denuit Michel, Trufin Julien
04/12/2019

7. Projects

Sustainable, Adequate and Safe Pensions

FW-B (Federation Wallonie-Bruxelles) financial support
2018-2023
Actions de Recherche Concertées

This interdisciplinary research project (law, economics, actuarial science, philosophy) aims at critically assessing the key conditions that a public pension system should fulfil to be successfully reformed. Our hypothesis is that there are three such conditions: i) financial sustainability, ii) social adequacy and iii) safe governance. Hence, the 'SAS' acronym. Our goal is to identify the pension architecture that is the most likely to generate SAS pensions.
https://saspensions.wordpress.com/

Promoters: Pierre Devolder, Alexia Autenne, Jean Hindriks, Vincent Vandenberghe, Axel Gosseries

Negative and ultra-low interest rates: behavioral and quantitative modelling

FW-B (Federation Wallonie-Bruxelles) financial support
2018-2023
Actions de Recherche Concertées

Interest rates are a cornerstone of economics and finance. They are at the foundation of asset pricing and monetary policy, and more generally of all intertemporal choices made by market participants and institutions every day, with huge consequences for the economic activity and wellbeing of our societies. Until recently, it was assumed (mostly implicitly) that interest rates could only possibly be positive. Notwithstanding, in the wake of the financial crisis initiated in 2008, major central banks of developed countries have been brought to conduct rates policies that turned them negative. The consequences of such a paradigm shift are both potentially huge and not well understood yet. This research project aims at shedding light on these consequences, both from an academic and a policy viewpoint, following three intertwined research lines that bring together a multidisciplinary team of researchers working on Behavioral Finance, Macro Finance, and Quantitative Finance.

Promoters: Catherine D'Hondt, Julio Dávila, Leonardo Iania, **Christian Hafner,** Olivier Corneille and Frederic Vrins

ISBA | Louvain Institute of Data Analysis and Modeling in economics and statistics

Thank you

for your attention!

ISBA

website:

https://uclouvain.be/en/research-institutes/lidam/isba