Olivier WINTENBERGER

Professor Dr. in Applied Mathematics and Actuary

Personal Informations

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Research interests: Heavy tailed processes, Weak dependence, Statistics for Markov chains, Online learning, Exponential inequalities.

Employment

2013-	**Professor**, organizer of the ISUP 1A (2017-), co-organizer of the actuarial program (2013-2014) LPSM, Université Pierre et Marie Curie, Paris, France
2014-2016	**Guest professor**, Mathematical institute, Copenhagen University, Denmark
2011-2014	**Affiliate researcher,** Laboratoire de Finance et Assurance, Centre de Recherche en Economie et STatistique, Malakoff, France
2008-2013	**Assistant Professor,** co-organizer of the actuarial program CEREMADE, Université Paris Dauphine, Paris, France
2004-2007	**Teaching Assistant:** École polytechnique, Palaiseau, France

Education

2012	**Habilitation à diriger des recherches**, CEREMADE, Dauphine, France
2007-2008	**Postdoctoral position** (with T. Mikosch, 1^{st} semester) Laboratory of Actuarial Mathematics, Copenhagen, Danemark
2007	**Phd in Applied Mathematics** (supervisors: J.-M. Bardet and P. Doukhan) Laboratory: SAMOS, Université Panthéon-Sorbonne, Paris, France
2004	**Master degree** in Applied Mathematics, Université Diderot, Paris, France **Diploma of Statistician-Economist** of the ENSAE, Paris, France

Research management

2014-2017 **Principal Investigator of AMERISKA**, an ANR network on Statistics for heavy tailed processes, applications in food and climate risks management,
2012-2014 **Scientific collaboration program**, French embassy of Copenhagen,
2014- **Associate Editor**, Extremes,
2016- **Associate Editor**, Bernoulli,
2012-2016 **Associate Editor**, Dependence Modeling,
2014- **Workshop co-organizer**, EVT and then VeLo at Jussieu, UPMC.
2017 **Challenge organizer**, Prediction of Spatio-Temporal Extremes at EVA 2017, Delft.
2018 **Conference co-organizer**, Kick-off conference of the LPSM, Paris.
2017 **Conference co-organizer**, Heavy Tails and Long Range Dependence, Telecom, Paris.
2014-2015 **Conferences organizer:** - Université d'été des Actuaires, UPMC.
- "Dependence, Limit Theorems and Applications", IHP.
- 60th birthday of T. Mikosch, KU.
Masterclass organizer, Mathematical Foundations of Heavy Tailed Analysis.
2018- **Member of scientific board**, Advestis.
2014- **Member of board**, Banque Finance Assurance of the SFDS society.

PhD-Post-Doc students

2017- **Nicolas Meyer**, High Dimensional Learning for Extremes.
2014- **Vincent Margot**, Online Learning for Time Series, application in finance.
Supervised with J.P. Baudry and F. Guilloux, Industrial PhD (CIFRE) at Advestis.
2014-2017 **Charles Tillier**, Heavy Tailed Analysis to Assess Food Risks.
Supervised with P. Bertail, Post-Doc at Hamburg.
2014-2017 **Johannes Heiny**, Extreme Eigenvalues of Sample Covariance and Correlation Matrices.
Supervised mostly by T. Mikosch, Post-Doc at Aarhus.
2009-2012 **Cai Sixiang**. Bootstraping Extreme Statistics for Financial Applications.
Supervised with J. L. Prigent and Paul Doukhan. Finance analyst.
2018- (Post-Doc) **Eric Adjakossa**, Online Aggregation of Kalman Filters.
2015-2016 (Post-Doc) **Pierre Gaillard**, Adaptive and Sparse Online Learning.
2018- (Research assistant) **Joseph de Vilmarest**, ENS Ulm.
2012-2013 (Research assistant) **Ferdinand Torron**, ENS Cachan.

Awards and invitations

2015 **Visiting Researcher position** (August), Torun, Poland
2013 **OFPR Lecture**, ENSAE, France
2013 **PhD Course** on Extremes in Space and Time, Copenhagen, Denmark
2012 **PhD Course**, Thematic cycle, UCP, France
2011 **Elsevier Travel** award, New Frontier in Applied Probabilities.
2009 **Graduate Student Travel** award, Graybill VIII.
2007 **Laha Travel** award, IMS.

Publications

[1] O. Wintenberger (2018) *Editorial: special issue on the extreme value analysis conference challenge "Prediction of extremal precipitation"*, Extremes, 21, 425-429.

[2] R. Kulik, P. Soulier and O. Wintenberger (2018) *The tail empirical process of regularly varying functions of geometrically ergodic Markov chains* accepted for publication in SPA.

[3] R. S. Pedersen and O. Wintenberger (2017) *On the tail behavior of a class of multivariate conditionally heteroskedastic processes*, Extremes, 21, 261-284.

[4] F. Blasques, P. Gorgi, S. J. Koopman and O. Wintenberger (2018) *Feasible Invertibility Conditions for Maximum Likelihood Estimation for Observation-Driven Models*, EJS, 12, 1019-1052.

[5] O. Wintenberger, (2017) *Exponential inequalities for unbounded functions of geometrically ergodic Markov chains. Applications to quantitative error bounds for regenerative Metropolis algorithms*, Statistics, 51.

[6] C. Tillier and O. Wintenberger (2017) *Regular variation of a random length sequence of random variables and application to risk assessment*, Extremes, 21, 27-56.

[7] O. Wintenberger, (2016) *Optimal learning with Bernstein Online Aggregation*, Machine Learning, 106.

[8] C. Francq, O. Wintenberger and J.-M. Zakoïan, (2016) *Goodness-of-fit tests for extended Log-GARCH models and specification tests against the EGARCH*, TEST, Online first.

[9] T. Mikosch and O. Wintenberger (2016) *A large deviations approach to limit theory for heavy-tailed time series*, Probab. Th. Rel. Fields 166, 233-269.

[10] O. Wintenberger (2015) *Weak transport inequalities and applications to exponential and oracle inequalities*, EJP, 20, 114, 1–27.

[11] T. Mikosch and O. Wintenberger (2014) *The cluster index of regularly varying sequences with applications to limit theory for functions of multivariate Markov chains*, Probab. Th. Rel. Fields 159, 157-196.

[12] J. Trashorras and O. Wintenberger (2013) *Large deviations for bootstrapped empirical measures*, Bernoulli, 20(4), 2014, 1845–1878.

[13] P. Alquier, X. Li and O. Wintenberger (2013) *Prediction of time series by statistical learning: general losses and fast rates*, Dependence Modeling, 1, 65-93.

[14] C. Francq, O. Wintenberger and J.-M. Zakoïan (2013) *GARCH models without positivity constraints: Exponential or Log GARCH?*, Journal of Econometrics 177, 34-46.

[15] O. Wintenberger (2013) *Continuous Invertibility and Stable QML Estimation of the EGARCH(1,1) Model*, Scandinavian Journal of Statistics 40, 846-867.

[16] T. Mikosch and O. Wintenberger (2013) *Precise large deviations for dependent regularly varying sequences*, Probab. Th. Rel. Fields 156, 851-887.

[17] J.-M. Bardet, W. Kengne, and O. Wintenberger (2012) *Detecting multiple change-points in general causal time series using penalized quasi-likelihood*, Electron. J. Statist. 6, 435-477.

[18] P. Alquier, O. Wintenberger (2012) *Model selection and randomization for weakly dependent time series forecasting*, Bernoulli 18 (3), 883-913.

[19] K. Bartkiewicz, A. Jakubowski, T. Mikosch, O. Wintenberger (2011) *Stable limits for sums of dependent infinite variance random variables* Probab. Th. Rel. Fields 150, 337-372.

[20] O. Wintenberger (2010) *Deviation inequalities for sums of weakly dependent time series*, Elect. Comm. in Probab. 15, 489-503.

[21] I. Gannaz, O. Wintenberger (2010) *Adaptive density estimation under weak dependence*, ESAIM Probab. Statist. 14, 151-172.

[22] J.-M. Bardet, O. Wintenberger (2009) *Asymptotic normality of the Quasi Maximum Likelihood Estimator for multidimensional causal processes*, Ann. Statist. 37, 2730-2759.

[23] P. Doukhan, O. Wintenberger (2008) *Weakly dependent chains with infinite memory,* Stoch. Proc. Appl. 118, 11, 1997-2013.

[24] P. Doukhan, O. Wintenberger (2007) *An invariance principle for weakly dependent stationary general models*, en collaboration avec P. Doukhan, Probab. Math. Statist. 27, 1, 45-73.

Book chapters and conference proceedings

[25] P. Gaillard and O. Wintenberger (2018) *Efficient online algorithms for fast-rate regret bounds under sparsity*, Accepted for the poster session of NIPS.

[26] N. Thiemann, C. Igel, O. Wintenberger, and Y. Seldin (2017) *A strongly quasiconvex PAC-Bayesian bound*. In Proceedings of Machine Learning Research, 76 (ALT).

[27] P. Gaillard and O. Wintenberger, (2017) *Sparse Accelerated Exponential Weights*, Accepted for AISTAT 2017, JMLR.

[28] N. Ragache, O.Wintenberger (2006) *Convergence rates for density estimators of weakly dependent time series*, Dependence in Probability and Statistics, (Eds P. Bertail, P. Doukhan and P. Soulier), Lecture Notes in Statist. 187, 349-372.

Preprints

[29] T. Mikosch, M. Rezapour and O. Wintenberger *Heavy tails for an alternative stochastic perpetuity model*.

[30] B. Basrak, O. Wintenberger and P. Zugec *On total claim amount for marked Poisson cluster models*.