

Florian Maire

CONTACT INFORMATION	Département de mathématiques et statistique, Université de Montréal, Pavillon André-Aisenstadt, Montréal, QC H3T 1J4, Canada http://maths.ucd.ie/~fmair ,	(+1) 514 343 7977 maire@dms.umontreal.ca
RESEARCH INTERESTS	Computational statistics, Sequential inference, MCMC methods, Variance reduction methods, Functional data analysis, Image processing, Random graphs inference	
EDUCATION	University College Dublin , Dublin, Ireland January 2014 – January 2018 Post Doctoral Research Fellow, <ul style="list-style-type: none">• Topic: Bayesian statistics, learning in Big Data settings, Noisy MCMC, Adaptive MCMC, Inference in random graphs• Advisor: Nial Friel• Research centers: School of Mathematics and Statistics, Insight Université Pierre et Marie Curie , Paris, France October 2010 – December 2013 Ph.D. in Probability and Statistics, <ul style="list-style-type: none">• Thesis: <i>Detection and Classification of Multispectral Infrared Targets</i>• Supervisors: Randal Douc, Éric Moulines and Sidonie Lefebvre• Research centers: ONERA, Telecom SudParis CITI, Telecom ParisTech TSI Telecom SudParis , Évry, France September 2007 – August 2010 Diplôme d'ingénieur, equivalent to M.Sc., <ul style="list-style-type: none">• Relevant courses: Probability, Statistics, Calculus, Information theory• Major: Mathematical finance	
EMPLOYMENT	Université de Montréal , Montréal, Québec, Canada September 2018 to present Assistant Professor (professeur adjoint), Département de mathématiques et statistique,	
SPOKEN LANGUAGES	<ul style="list-style-type: none">• French (native speaker)• English (fluent)• German (intermediate)• Arabic (novice)	
REFEREED PUBLICATIONS	<ul style="list-style-type: none">• Maire, F., Friel, N. and Alquier, P. "Informed Sub-Sampling MCMC: Approximate Bayesian Inference for Large Datasets.", <i>Statistics and Computing</i>, (2018) To appear, link• Bouranis, L., Friel, N. and Maire, F. "Model comparison for Gibbs random fields using noisy reversible jump Markov chain Monte Carlo.", <i>Computational Statistics & Data Analysis</i>, (2018) To appear, arXiv	

- L. Bouranis, N. Friel and **F. Maire**. "Bayesian model selection for exponential random graph models via adjusted pseudolikelihood.", *Journal of Graphical and Computational Statistics*, (2018) To appear, [link](#)
 - L. Bouranis, N. Friel and **F. Maire**. "Efficient Bayesian inference for exponential random graph models by correcting the pseudo-posterior distribution.", *Social Networks*, (2017) [link](#)
 - **Maire, F.**, E. Moulines and Lefebvre, S. "Online EM for functional data", *Computational Statistics & Data Analysis*, (2017) [link](#)
 - **Maire, F.**, Lefebvre, S. "Detecting aircraft in low-resolution multispectral images: specification of relevant IR wavelength bands", *IEEE Journal Selected Topics on Applied Earth Observations and Remote Sensing*, (2015) [link](#)
 - Douc, R., **Maire, F.** and Olsson, J. "On the use of Markov chain Monte Carlo methods for the sampling of mixture models: a statistical perspective.", *Statistics and Computing* (2015). [link](#)
 - **Maire, F.**, Douc, R. and Olsson, J. "Comparison of asymptotic variances of inhomogeneous Markov chains with application to Markov chain Monte Carlo methods." *The Annals of Statistics* (2014). [link](#)
 - Allasonnière, S., Glaunès, J. A., Bigot, J., **Maire, F.**, and Richard, F. J-P. "Statistical models for deformable templates in image and shape analysis", *Annales Mathématiques Blaise Pascal*, (2013). [link](#)
 - **Maire, F.**, Lefebvre, S., Douc, R. and Moulines, É. "An online learning algorithm for mixture models of deformable templates", *In Proceedings of IEEE Machine Learning for Signal Processing workshop*, (2012). [link](#)
 - Jakubowicz, J., Lefebvre, S., **Maire, F.** and Moulines, É. "Detecting aircraft with a low-resolution infrared sensor", *IEEE Transactions on Image Processing*, (2012). [link](#)
 - **Maire, F.**, Lefebvre, S., Moulines, É. and Douc, R. "Aircraft classification with low-resolution infrared sensor", *In Proceedings of IEEE Statistical Signal Processing workshop*, (2011). [link](#)
- SUBMITTED PAPERS
- **Maire, F.** and Vandekerckhove, P. "On Markov chain Monte Carlo for sparse and filamentary distributions.", (2018). [arxiv](#)
 - Vialaret, M. and **Maire, F.** "Note on the convergence time of some non-reversible Markov chain Monte Carlo methods.", (2018). [arxiv](#)
 - Boland, A., Friel, N. and **Maire, F.** "Efficient MCMC for Gibbs Random Fields using pre-computation.", (2017). [arXiv](#)
 - **Maire, F.**, Friel, N., Mira, A. and Raftery, A. "Adaptive Incremental Mixture Markov chain Monte Carlo", (2017). [arXiv](#)

PRESENTATIONS

- Conferences

- International Conf. on Monte Carlo Methods and Applications, HEC, Montréal, Canada July 2017
- Piecewise Deterministic Markov Processes and Sampling, École des Ponts, Marne-la-Vallée, France February 2017
- MCMC and Particle methods: Sampling, Inference and Stochastic Approximation, ICMS, Edinburgh, UK September 2016
- CRiSM Workshop Estimating intractable constant in Statistics, University of Warwick, UK April 2016
- MCMSki, Lenzerheide, Switzerland January 2016
- Conference on Applied Statistics in Ireland, Cork, Ireland May 2015
- IEEE Machine Learning for Signal Processing, Santander, Spain September 2012
- Congrès d'Analyse Numérique (SFdS), Superbesse, France May 2012
- IEEE Statistical Signal Processing workshop, Nice, France June 2011

- Seminars

- Apprentissage statistique à l'ère du Big Data : stabilité d'approximations de certains algorithmes, Université de Montréal, Canada January 2018
- Noisy Markov chain Monte Carlo methods for efficient approximate Bayesian inference, University College Dublin, Ireland November 2017
- Informed Sub-Sampling MCMC: Approximated Bayesian Inference for Large Datasets, Glasgow University, UK February 2017
- Some remarks on spectral analysis of Markov chains: from Protein Dynamics to MCMC algorithms, University College Dublin, November 2016
- Light and Widely Applicable MCMC: Bayesian inference for large datasets, University College Dublin, Ireland June 2015
- Échantillonnage par chaîne de Markov adaptative : une approche incrémentale, Université d'Évry Val d'Essonne, France April 2015
- Adaptive Incremental Mixture Markov chain Monte Carlo, Trinity College Dublin, Ireland November 2014
- Bayesian inference for Big data problems with applications to time series model, University College Dublin, Ireland September 2014
- Stochastic Online EM: theory and implementation, University College Dublin, Ireland February 2014
- Peskun ordering for non homogeneous Markov chains, University College Dublin, Ireland January 2014

TEACHING EXPERIENCE

Lecturing 2014-2015 & 2015-2016, Semester 2, 24 hrs
Module: Time Series,
level: Postgraduate,
School of Mathematics and Statistics, University College Dublin, Ireland

Lecturing 2015-2016 & 2016-2017, Semester 1, 80 hrs
Module: Probability Theory,
level: Second Year,
School of Mathematics and Statistics, University College Dublin, Ireland

Lecturing 2014-2015, Semester 2, 6 hrs
Courses: Monte Carlo methods and Stochastic processes,
level: Postgraduate,
Main Instructor: Nial Friel,
School of Mathematics and Statistics, University College Dublin, Ireland

Teaching Spring 2012 and Spring 2013
Courses: Introduction to Probability and Calculus
Instructor: Randal Douc
double-degree programme
Telecom SudParis, Évry, France

Teaching Spring 2011, Spring 2012 and Spring 2013
Supervision of Maths project
Instructor: Vathana Ly-Vath
Simulation, Random graphs, Machine learning
ENSIIE, Évry, France

SUPERVISION

Lampros Bouranis, 2014-2018
PhD student at UCD, supervised by N. Friel, defended January 2018
topic: Bayesian inference for exponential random graph models.

Marie Vialaret, June-November 2017
Master student, ENSAE
topic: Non-reversible Markov chains and applications to efficient MCMC design.

Quentin Bergé, Summer 2016
Master student, (Telecom SudParis)
topic: Bayesian inference of transition rate matrix and application to protein dynamics.

Olivier Roux, Feb.-July 2016
Master student, Centrale Marseille (Engineering School)
topic: Modelling and inferring molecular conformational changes of proteins.

Lionel Riou-Durand, Summer 2015
Master student, ENSAE and MVA Cachan
topic: Stability of different Markov chains based on variations of the Metropolis-Hastings algorithm and their application in Big Data problems.

Adil Salim, Summer 2014
Master student, ENSAE, now PhD candidate at Telecom ParisTech
topic: Influence of data ordering in Sequential Monte Carlo methods for static inference.

AWARD

On November the 24th 2016, I was awarded the 2016 DGA prize for my PhD thesis. The DGA is the French procurement agency and found (or partially found) around 450 PhD thesis. It rewards every year three PhD thesis for their original scientific contribution.

MISCELLANEOUS

- I have served as reviewer for Statistics and Computing, the Electronic Journal of Statistics, the Annals of Applied Probability, IEEE Transactions on Signal Processing, AISTATS and ICML.
- Internship in Société Générale Corporate & Investment Banking, La Défense, France in the Risk department: deal pricing, structuring, Bâle II (July–December 2009)
- Internship in Lund University, Lund, Sweden with Jimmy Olsson in the Centre for Mathematical Sciences: time series, Markov chains (July–September 2010)
- Collaboration with Skillpages and Insight: research on statistical methods for spam and auto-moderation in social network (January – September 2014)

REFERENCES

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