# Antonietta Mira

**Current Position**: Professor of Statistics, Faculty of Economics, Institute of Computational Science (ICS), Università della Svizzera italiana (USI), Lugano, since 2007.
Founder and director of the Data Science Lab, ICS, USI, since March 2015
Distinguished part-time professor of Statistics, Department of Science and High Technology, University of Insubria, Italy, since April 2015

**Education**

- Ph. Doctorate in Statistics, University of Minnesota, Minneapolis, MN, 1998
- Master of Science in Statistics, University of Minnesota, Minneapolis, MN, 1996
- Doctorate in Methodological Statistics, University of Trento, Italy, 1995
- Degree in Economics, summa cum laude, University of Pavia, Italy, 1991

**Honors**

- Fellow of the *International Society for Bayesian Analysis* (ISBA), since 2016
- Fellow of *Istituto Lombardo Accademia di Scienze e Lettere*, since 2016
- Visiting Fellowship of the I*saac Newton Institute for Mathematical Sciences* (Cambridge, UK) to participate in the program Theoretical Foundations for Statistical Network Analysis, July - August 2016
- *Accademia dei Lincei*, 5th IinteR-La+B, main discussant, Rome 2016
- Public debate at *EXPO 2015*, Milano, September 2015
- Public lecture for the *Festival of the Swiss Academy of Science 200 years anniversary*, October 2015
- Visiting Fellowship of the *Isaac Newton Institute for Mathematical Sciences* (Cambridge, UK) to participate in the program Advanced Monte Carlo Methods for Complex Inference Problems, April - May 2014
- Opening lecture of the academic year 2011-12, Università della Svizzera italiana (USI)
- Invited lecture at the *Istituto Lombardo Accademia di Scienze e Lettere*, Milano, 2012 and 2016
- *Savage Thesis Award, 1998* for an outstanding doctoral dissertation in Bayesian Econometrics/Statistics
- *Dissertation Fellowship, 97/98*, University of Minnesota
- Research Assistantship, U. of Minnesota, supported by *National Science Foundation*, 96/97

**Research Projects, Conference Lectures and Seminars (since 2007)**

2019 **Invited lectures at international conferences**:

- "2-day Statistical Methods for the Analysis of High-Dimensional and Massive Data set", QUT, Brisbane, January 21 - February 4
- Van Dantzig seminar, UvA, Amsterdam, February 15
- Science and us, Teatro Eliseo, Roma, May 18 (outreach, with Prof. Vallortigara)
- Young Researchers Workshop on Machine Learning for Materials Science, Helsinki, May 8-10
- Bayesian Inference in Stochastic Processes, Madrid, Royal Academy, Keynote speaker, June, 12-14
- Max Planck Institute for Demographic Research, Retreat on Simulation, Rostock, July, 1-3
- Joint Statistical Meeting of the American Statistical Association, Denver, Invited speaker in invited session on "Scalable Bayesian Models for Time Series and Dynamic Networks: Making an Impact in Business and Socio-Economic Applications", August
- 5th Meeting on Statistics, Aegina, September
- Bayes on the Beach conference, Gold Coast, November

2018 **Invited lectures at international conferences**:

- Casa della Cultura, Milano, February (outreach activity)
- Fondazione Bassetti, Milano, debate on *Precision medicine: clinical opportunities and public responsabilities*
- Science and us, Teatro Eliseo, Roma, May (outreach, with Maria Grazie Mattei)

- Keynote speaker, Bayes Comp meeting, Barcellona, March

- Statistics, Monte Carlo, and More: In Honor of Charlie Geyer, Minneapolis, April

- ISBA World meeting, Edimburgo, Section on Novel methods for handling big models and big data, June

- Keynote speaker, European Seminar on Bayesian Econometrics (ESOBE) , New Orleans Branch of the Federal Reserve Bank of Atlanta, New Orleans, October

- Joint Statistical Meeting of the American Statistical Association, Vancover, Invited speaker in a section on Recent Advances in Bayesian Computation and Modeling of High-Dimensional Multivariate Data, July

- Bayesian Statistics in the Big Data Era, CIRM (Marseille Luminy, France), November

**2017 Invited lectures at international conferences**:

- Big Data & Learning Analytics, Bern, Switzerland, March

- SOS21 Workshop on *Convergence with Data Science: a New Beginning for HPC*, Davos, Switzerland, March

- Fourth Bayesian, Fiducial, and Frequentist Conference, Harvard, May

- ARS'17 International Workshop: Challenges in Social network research, Napoli, May

- Joint meeting of the Eastern Mediterranean Region and Italian Region of the international Biometric Society, Thessaloniki, Greece, May

- SIS2017, conference of the Società Italiana di Statistica, invited lecture on *Data science for network data*, Firenze, Italy, June

- STARTUP RESEARCH workshop, senior researcher, Antica Certosa di Pontignano, Siena, Italy, June

- 5th Symposium on Games and Decisions in Reliability and Risk, Spanish Royal Academy of Sciences, Madrid, Spain, June

- ISI World Statistics Congress, Invited Session Organizer on *Models and algorithms for network data*, Marrakech, Marocco, July

- 14th Applied Statistics 2017, International Conference, Bled, Slovenia, September

- The Statistical and Applied Mathematical Sciences Institute (SAMSI) one week-long workshop on *Trends and advances in Monte Carlo sampling algorithms*, Duke University, US, December

**2016 Invited lectures at international conferences**:

- University of Stirling, CIBB international conference on *Computational Intelligence methods for Bioinformatics and Biostatistics*, Stirling, September

- Workshop on *MCMC and particle methods: sampling, inference and stochastic approximation* at the Institute of Computational al Mathematical Statistics, ICMS, in Edinburgh, September

- Oxford University, Department of Statistics, visiting professor, 1 week, July

- Cambridge, Isaac Newton Institute for Mathematical Sciences, visiting professor, 2 weeks, July

- ISBA World Meeting, Sardegna, June. Organizer of 2 special topic sessions: *At the interface between posterior and molecular simulation* and *Methodological and computational advances for complex networks systems*

- COmputational Statistics and MOlecular Simulation, COSMOS, Paris, February

- CRiSM Workshop Estimating constants, Warwick, April

**2017 Research grants**

- Swiss Data Science Center, "Bayesian Parameter Inference for Stochastic Models ? BISTOM", co-applicant, 2018-2020, 500 kCHF

**2016 Research grants**

– **SNSF (Swiss National Science Foundation) Research grant**, "Statistical solutions for regressions with big spatial data" Co-Applicants: G. Arbia, U. Cattolica del Sacro Cuore, Roma and IDIDS, USI (3 years - 184.000 CHF)

## 2015 Invited lectures at international conferences:

– Keynote speaker al 11th International Workshop for the Australasian chapter of the International Society for Bayesian Analysis (ISBA) and the annual meeting of the Bayesian Statistics section of the Statistical Society of Australia, Inc. (SSAI), Gold Coast, Australia, December

– Visiting professor, Queensland University of Technology, Brisbane, Australia, December (10 days)

– BIRS workshop, "Free-energy calculations. A mathematical perspective", Oaxaca, Mexico, July

– International conference, "3rd Meeting on Statistics", Athens, Greece, June

## 2015 Research grants

– **SNSF**, PI, "Statistical Inference on Large-Scale Mechanistic Network Models" (3 years - 306.000 CHF)

– **SNSF conference financial support**, for the 6th Joint Meeting of Institute of Mathematical Statistics/International Society for Bayesian Analysis. For the same conference I've received financial support from *Google* and *Springer*, *CSCS* (Centro Svizzero di Calcolo Scientifico) and from *ISBA* (International Society for Bayesian Analysis, 13.300 USD).

– **Swiss National Platform of Advanced Scientific Computing (PASC)**, member of the research team

## 2014 Invited lectures at international conferences:

– 8th International Conference on Computational and Financial Econometrics (CFE), "A general Bayesian MIDAS regression approach with application to data frequency selection", joint work with E. Ghysels and R. Solgi. Pisa, 6-8 December

– Meeting of the Italian Statistical Society, specialized session on "Computations with intractable likelihood", Cagliari, 11-13 June

– I. Newton Institute for Mathematical Sciences, visiting professor, 1 month.

– Workshop on "Computational methods for statistical mechanics – At the interface between mathematical statistics and molecular simulation" at the ICMS in Edinburgh, 2 - 6 June

## 2014 Research grants

– **SNSF Agorà project**, PI, " Numb3d by numb3rs? Lets play with Digits, Dice and Data: a 3D interactive tour " (2 years - - 198.000 CHF)

– **SNSF research project**, co-PI with G. Barone-Adesi, "A Bayesian estimate of the pricing kernel" (3 years - 175.000 CHF)

– **SNSF interdisciplinary project**, co-PI with A. Lomi, "Bayesian Modelling and Algorithms for Heterogenous Interorganisational Networks" (3 years - 308.000 CHF)

## 2013 Invited lectures at international conferences:
• Short course at the "Young statistician day" on "Applied Bayesian Modeling and computational methods" during the conference *Statistique Appliquée pour le Développement en Afrique*, Cotonou, Bénin, Africa, March 2013

•*ISBA Regional Meeting and International Workshop/Conference on Bayesian Theory and Applications (IWCBTA)*, Varanasi, India, January 6-10, 2013

## 2012 Invited lectures at international conferences:
•*Challenges and Advances in High Dimensional and High Complexity Monte Carlo Computation and Theory* at the Banff International Research Station for Mathematical Innovation and Discovery, March 18-23, 2012
•*Advances in Markov Chain Monte Carlo* at the International Centre for Mathematical Sciences (ICMS) in Edinburgh, 23-25 April 2012.
•*ISBA (International Society for Bayesian Analysis) World Meeting*, Kyoto, June 2012
•*5th International Conference of the ERCIM WG on COMPUTING & STATISTICS (ERCIM 2012)*, Oviedo, Spain, December 2012

2011 **Invited lectures at international conferences**:
  •*Applied Stochastic Models and Data Analysis*, in the session on "Monte Carlo methods for Bayesian inverse problems", Roma, Italy, June
  •*VIII National congress of italian Biometric Society*, Brescia, Italy, June
  •*Joint international meeting of the IMS (Institute of Mathematical Statistics) and ISBA*, Satellite meeting on Adaptive MCMC, Utah, January.
  • *Hierarchical Models and Markov Chain Monte Carlo*, Crete, June

2011 **SNSF research project**, PI, "Zero-Variance Markov chain Monte Carlo" (2 years)

2010 **Invited lectures at international conferences**:
  •*2010 World Meeting of the International Society for Bayesian Analysis*, invited discussant
  •*Mathematical and Statistical Methods for Actuarial Sciences and Finance*, invited speaker in the session organized by Prof. G. Barone-Adesi
  •*European Meeting of Statistician*, speaker in invited session organized by J. Moeller

2010 **SNSF research project**, PI, "Adaptive Monte Carlo methods to estimate financial risk models " (2 years)

2009 **Invited lectures at international conferences**:
  •*EPSRC Symposium Workshop on Markov Chain-Monte Carlo*, Warwick, UK
  •*3rd International Conference on Computational and Financial Econometrics*, London, UK

2009 **Research projects**:
  •Italian national research grant (2 years): *latent variable models for the analysis of panel data*, PI: Prof. G. Consonni, U. of Pavia
  •Research Grant of Insubria University: *Bayesian model comparison and estimation*, PI: A.

2008 **Invited lectures at international conferences**:
  •*7th World Congress in Probability and Statistics*, sponsored by Bernoulli Society and IMS
  • *9th ISBA World Meeting.*

2008 **Research projects**:
  •Research Grant of Insubria University: *Monte Carlo simulation: new developments*, PI: Mira.
  •Italian national research grant (COFIN, 2009 mentioned above).
  •Since 2004 takes part to a research project supported by Lombardia Region as the statistical referee. Title of the project: "Induced medical prescription". Two research fellowships have been awarded on this grant and A. Mira has coordinated the research projects.

2007 **Invited lectures at international conferences**:
  •*Third Workshop on Monte Carlo Methods*, Harvard, Massachussetts, USA.

2007 **Research projects**:
  • Italian university research grant, *Adaptive Monte Carlo*.
  • Visiting professor (1 week) at the University of Paris Douphine (FR).
  •Italian national research grant (COFIN): *Variabili strumentali and valutazioni di politiche: una analisi basata sui modelli marginali con classi latenti*, PI: Prof. G. Consonni.

# Editorial boards

- **Co-Editor** of the journal *Bayesian Analysis* (Journal Citation Reports IF = 2.417, 6th highest IF in the list of 117 Stats and Probability journals), 2008-16

- **Guest Editor** for a special issue of the *International Journal of Approximate Reasoning*, 2016

- **Chief Guest Editor** for a special issue of the journal *Statistics and Computing*, 2015

- **Chief Guest Editor** for a special issue of the journal *Statistics and Computing*, 2014

- **Associate Editor** of the *Journal of Computational and Graphical Statistics*, 2006-08

- **Associate Editor** for *Statistica Sinica*, 2005-08

## Conference organizations

- **Member of the scientific program committee** of the meeting of the Italian Statistical Society, 2018

- **Member of the scientific program committee and of the organizing committee** of the joint workshop Swiss National Supercomputing Center and dell'InterDisciplinary Institute of Data Science, on *Data Science with [a] Spark*, September 2016

- **Member of the scientific committee** of the international (6 days) workshop on *Challenges and Advances in High Dimensional and High Complexity Monte Carlo Computation and Theory*, Banff (Canada), International Research Station for Mathematical Innovation and Discovery, (March 2012). Workshop fully supported by BIRS (Banff Intern. Research Station)

- **Member of the scientific committee** of the (3 days) workshop on *Advances in Markov Chain Monte Carlo: Theory, Methodology and Applications*, Edimburgo (April 2012). Workshop fully founded by the International Centre for Mathematical Sciences

- **Member of the scientific program committee (co-chair) and of the organizing committee (chair)** of the second (2005), third (2008), fourth (2011), fifth (2014) and sixth (2016) joint international meeting IMS/ISBA, Institute of Mathematical Statistics/International Society for Bayesian Analysis Meeting

- **Member of the scientific committee** of the second Festival of Statistics and Demography, Treviso, Italy, 2016

- **Member of the scientic program committee and of the organizing committee** of the second Greco Italian Meeting on Statistics, Sardegna, Italy, 2010

- **Member of the scientific program committee** of the ninth world meeting of ISBA, Australia 2008.

- **Member of the scientific program committee** of the eight *"Valencia/ISBA World Meeting on Bayesian Statistics"*, Spain, 2006.

## Conference sessions organizations

- **Joint Statistical Meeting of the American Statistical Association, Denver, 2019** on Approximate Bayesian Computation

- **Italian Statistical Meeting on Smart Statistics for Smart Applications, Milano, 2019** on *Bayesian methods for species sampling and privacy*

- **ISI World Statistics Congress, 2017**, Invited Session Organizer on *Models and algorithms for network data*, Marrakech, Marocco, July

- **ISBA World Meeting, 2016**, session sponsored by BayesComp, *At the interface between posterior and molecular simulation*

- **ISBA World Meeting, 2016**, session sponsored by Junior-ISBA and SIS-Bayes (Società Italiana di Statistica), *Methodological and computational advances for complex networks systems*

- **Organizes a session** on "MCMC for Bayesian nonparametrics", V IMS-ISBA joint meeting, Chamonix (FR), 2014

- **Organizes a session** on "MCMC applications in finance" at the CFE 2010, (Computational and Financial Econometrics), London

- **Organizes a session** on "Efficient MCMC algorithms to estimate Bayesian financial econometric models " at the CFE 2011, London

- **Organizes an invited session for the Joint Statistical meeting of the American Statistical Association** held in Salt Lake City (USA), title of the session: *Adaptive Monte Carlo methods*.

## Master, PhD and Post-doc Students

**Post-Doc**

A. Caimo (2016: Lecturer, School of Mathematical Science, Dublin Institute of Technology); R. Dutta (since 2018 Assistant Professor, Warwick University). **Dottorato**

P. Tenconi, R. Solgi (post-doc department of Statistics, Harvard University, USA 2014-16); S. Peluso (lecturer, Statistics, l'Università Cattolica del Sacro Cuore di Milano dal 4.2015); K. Rigana; F. Macaluso; C. Legnazzi, F. Bianchi, C. Ghiringhelli, F. Denti.

**Master**

G. Accogli, M. Huynh, B. Chowdhury.

## Other Activities (since 2006)

- **Advisory board for the Harvard Data Science Review** since 2019

- **Member of the IMS Task Force on the Ph.D. Curriculum in Statistics and Probability** since 2019

- **Member of the ISBA Continuing Education Committee**: 2019 -2021

- **Member of Advisory Board** for the CoSInES project: 2018-19

- **Member of Joint IMS/Bernoulli Society Publications Management Committee**: 2018-21.

- **Member of the IMS council**: elected for the term 2017-20.

- **Co-founder and Co-director** of the Interdisciplinary Institute of Data Science, USI, 2015-2017

- **Vice-Dean**, Faculty of Economics, USI, Lugano, 2013-15

- **Board member of the ISBA Section on Bayesian Computation**: elected for the term 2013-14 and re-elected for the term 2015-16

- **Member of the ISBA council**: elected for the term 2011-13. ISBA website http://bayesian.org/

- **Scientific advisor** of the Ideatorio (USI) for the exhibit "Number numb", 2014-15

- **Member of the Savage Award Selection Committee"** (2003-05 and 2010-11) of the ISBA

- **Member of the scientific program committee** of the master *Methods for Management of Complex Systems*, of the IUSS (Institute for advance studies) of Pavia, since January 2003-07.

- **Member of the Lindley Price Committee** for the year 2007/08.

- **Member of the list of experts of CIVR** (Comitato di Indirizzo per la Valutazione della Ricerca), 2005-6; 2011-12 and 2011-14

## Main research interests

Statistical theory of Markov chain Monte Carlo methods (MCMC) and other computational methods such as Importance sampling and Perfect simulation used to calibrate/estimate parameters of complex modes in large data context. Bayesian parametric and non-parametric methodology to include expert prior opinions in the inferential process. Application of statistical models to problems mainly arising in social science, finance, economics and industry with a clear interdisciplinary attitude. Data Science.

**Areas of particular interest are**:

- Data Science
  - Statistical learning, uncertainty quantification, model selection
  - Models for network/relational data and for processes evolving on networks (such as diseases or fake news)
  - Models for large spatial data with application to optimal positioning of defibrillators and cardiac risk map
  - Scalability and privacy issues related to "big data"
  - Computational algorithms for complex models and for doubly intractable problems

- Computational statistics
  - Approximate Bayesian Computation
  - Markov chain Monte Carlo methods, Reversible Jumps algorithm
  - Adaptive importance sampling, Adaptive Delayed Rejection
  - Population Monte Carlo and particle filters
  - Perfect simulation, Slice sampler

- Bayesian methodology
  - Mixture models, Latent variable models, hidden Markov models and graphical models
  - Non parametric approach
  - Model comparison via Bayes factor

- Financial data
  - Early fraud detection in credit card transactions
  - Bayesian financial risk models and credit risk models
  - Models for financial high frequency data
  - Mixed Data Sampling (MIDAS) regression models
  - Nonparametric Estimation of the State Price Density
  - Filtered historical simulation
  - Change point detection in time series

- Health data
  - Analysis of Out of Hospital Cardiac Arrests
  - Optimal positioning of defibrillators
  - Brain connectivity data from FMRI
  - Spreading disease on contact networks
  - Personalized models for platelets deposition
  - Protein-protein interaction data
  - Optimal design of two-arm clinical trials

## Publications
**Peer-reviewed articles**

- S. Petrone and A. Mira, Bayesian hierarchical nonparametric inference for change-point problems. *Bayesian Statistics 5*, pp. 693-703, J. M. Bernardo, J.O. Berger, A. P. Dawid, A. F. M. Smith (Eds.), Clarendon Press, Oxford, 1996

- R. Bellazzi, C. Larizza, A. Riva, A. Mira and S. Fiocchi, Distributed intelligent data analysis in diabetic patients management. *Journal of the American Medical Informatics Association*, pp. 194-198 Edited by J. J. Cimino , Hanley & Belfus, 1996

- A. Mira, Distribution-free test for symmetry based on Bonferroni's measure. *Journal of Applied Statistics*, Vol. 26, No. 8, pp. 959-972, 1999

- L. Tierney and A. Mira, Some adaptive Monte Carlo methods for Bayesian inference. *Statistics in Medicine*, Vol. 18, pp. 2507-2515, 1999

- A. Mira and C. J. Geyer, On non-reversible Markov chains. *Fields Institute Communications*, Vol. 26: Monte Carlo Methods, pp. 95-110. Published by the American Mathematical Society, 2000

- A. Mira, J. Möller and G.O. Roberts, Perfect Slice Samplers. *Journal of the Royal Statistical Soc. Ser. B*, Vol. 63, No. 3, pp. 593-606, 2001

- P.J. Green and A. Mira, Delayed rejection in reversible jump Metropolis-Hastings, *Biometrika*, Vol. 88, No. 4, pp. 1035-1053, 2001

- A. Mira, Efficiency of finite state space Monte Carlo Markov chains, *Statistics & Probability Letters*, Vol. 54, No. 4, pp. 405-411, 2001

- A. Mira, On Metropolis-Hastings algorithms with delayed rejection, *Metron*, Vol. LIX, No. 3-4, pp. 231-241, 2001

- A. Mira and P.J. Green, Invited discussion of 'The art of data augmentation' by David A. van Dyk and Xiao-Li Meng. *J. of Computational and Graphical Statistics*, Vol 10, No. 1, pp. 94-98, 2001

- A. Mira, Ordering and improving the performance of Monte Carlo Markov chains, *Statistical Science*, Vol. 16, No. 4, pp. 340-350, 2001

- A. Mira and L. Tierney, Efficiency and Convergence Properties of Slice Samplers. *Scandinavian Journal of Statistics*, Vol. 29, No. 1, pp. 1-12, 2002

- A. Mira and D. Sargent, A new strategy for speeding Markov chain Monte Carlo algorithms *Statistical Methods & Applications*, Vol. 1:12, pp. 49-60, 2003

- A. Mira and G. Roberts, Invited discussion of 'Slice sampling' by R. Neal, *Annals of Statistics*, Vol. 31, No. 3, pp. 705-767, 2003

- A. Mira and P. Tenconi, Bayesian estimate of credit risk via MCMC with delayed rejection, *Stochastic Analysis, Random Fields and Applications IV*, pp. 277-291, in the series "Progress in Probability", Birkhäuser Verlag, Basel, 2004

- A. Mira and G. Nicholls, Bridge estimation of the probability density at a point, *Statistica Sinica*, Vol. 14, No. 2, pp. 603-612, 2004

- D. Bressanini, A. Morosi, S. Tarasco and A. Mira, Delayed Rejection Variational Monte Carlo, *Journal of Chemical Physics*, Vol. 121, No. 8, pp. 3446-3451, 2004

- F. Audrino, G. Barone-Adesi and A. Mira, The stability of factor models of interest rates, *Journal of Financial Econometrics*, Vol. 3, No. 3, pp. 422-44, 2005

- A. Mira, chapter title "MCMC methods to estimate Bayesian parametric models" in the book: *Bayesian Statistics: Modelling and Computation*, Vol. 25, pp. 419-439, edito da D.K. Dey and C.R. Rao, *Handbook of Statistics*, 2005

- F. Bartolucci, L. Scaccia and A. Mira, Efficient Bayes factor estimation from reversible jump output, *Biometrika*, Vol. 93, 1, pp. 41-52, 2006

- H. Haario, M. Laine, A. Mira and E. Saksman, DRAM: Efficient Adaptive MCMC. *Statistics and Computing*, Vol. 16, pp. 339-354, 2006

- A. Mira, Stationarity preserving and efficiency increasing probability mass transfers made possible. *Computational Statistics*, Vol. 21, No. 3-4 (double issue), pp. 509-522, 2007

- A. Mira and A. Baddeley, Deriving Bayesian and frequentist estimators from time-invariance estimating equations: a unifying approach (with discussion). In *Bayesian Statistics 8*, J. M. Bernardo, at al, eds., Oxford University Press, pp. 325-348, 2007

- F. Leisen and A. Mira, An extension of Peskun ordering to continuous time Markov chains, *Statistica Sinica*, Vol. 18, pp. 1641-1651, 2008

- A. Mira and F. Leisen, Covariance ordering for discrete and continuous time Markov chains, *Statistica Sinica*, Vol. 19, pp. 651-666, 2009

- Mantovani V., Lepore V., Mira A. and Berglin E., Non-inferiority randomized trials, an issue between science and ethics: the case of the SYNTAX study. *Scandinavian Cardiovascular Journal*, Vol. 44, No. 6, pp. 321-324, 2010

- A. Mira, Invited discussion of 'Improved Approximate Sum-Product Inference Using Multiplicative Error Bounds' by Y. Wexler and C. Meek in *Bayesian Statistics 9*, pp. 466-500, J. M. Bernardo, M. J. Bayarri, O. Berger, A. P. Dawid, D. Heckerman, A. F. M. Smith and M. West (Eds.), Oxford University Press, 2001

- A. Mira and H. Haario, discussion of "Riemann manifold Langevin and Hamiltonian Monte Carlo methods" by M. Girolami and B. Calderhead, *J. of the Royal Statistical Society*, Vol. 73, No. 2, pp. 190-191, 2011

- M. Filippone, A. Mira and M. Girolami, Invited discussion of "Sampling Schemes for Generalized Linear Dirichlet Process Random Effects Models" by M. Kyung, J. Gill, and G. Casella, *Statistical methods and applications*, Vol. 20, No. 3, pp. 295-297, 2011

- JM. Cornuet, JM. Marin, A. Mira and C. Robert, Adaptive Multiple Importance Sampling, *Scandinavian Journal of Statistics*, Vol. 39, Issue 4, pp. 798-812, 2012

- F. Rigat and A. Mira, Parallel hierarchical sampling: a practical general-purpose multiple-chains algorithm. *Computational Statistics & Data Analysis*, Vol. 56, pp. 1450-1467, 2012

- A. Mira, R. Solgi and D. Imparato, Zero Variance Markov Chain Monte Carlo for Bayesian Estimators. *Statistics and Computing*, Vol 23:5, pp. 653-662, 2013

- R. Solgi and A. Mira, A Bayesian Semiparametric Multiplicative Error Model with an Application to Realized Volatility, *Journal of Computational and Graphical Statistics*, 22:3, pp. 558-583, 2013

- M. Girolami and A. Mira, invited discussion of "A Vine-copula Based Adaptive MCMC Sampler for Efficient Inference of Dynamical Systems" by D. Schmidl, C. Czado, S. Hug and F. J. Theis, *Bayesian Analysis*, Vol. 8, No. 1, pp. 27-32, 2013

- T. Papamarkou, A. Mira and M. Girolami, Zero Variance Differential Geometric MCMC Algorithms, *Bayesian Analysis*, Vol. 9, No. 1, pp. 97-128, 2014

- A. Caimo and A. Mira, Delayed rejection algorithm to estimate Bayesian social networks, *Journal of Methodological and Applied Statistics*, 16(1), 33 44, 2014

- S. Peluso, F. Corsi and A. Mira, A Bayesian High-Frequency Estimator of the Multivariate Covariance of Noisy and Asynchronous Returns, *Journal of Financial Econometrics,* Vol. 13, No. 3, pp. 665-697, 2015

- A. Caimo and A. Mira, Efficient computational strategies for doubly intractable problems with applications to Bayesian social networks, *Statistics and Computing*, Vol. 25, pp. 113-125, 2015

- S. Peluso, A. Mira and P. Muliere, Reinforced Urn Processes for Credit Risk Models, *Journal of Econometrics*, Vol. 184, Issue 1, pp. 1-12, 2015

- N. Friel, A. Mira and C. Oates, Exploiting Multi-Core Architectures for Reduced-Variance Estimation with Intractable Likelihoods, *Bayesian Analysis*, Vol. 11, N. 1, pp 215-245, 2016

- A. Mira, The strength of uncertainty: statistics as guide in the world of probable. *Rivista Italiana di Medicina Legale e del Diritto in Campo Sanitario*, 37(4):1437-1448, 2015

- M. Byshkin, A. Stivala, A. Mira, R. Krause, G. Robins and A. Lomi, Auxiliary Parameter Markov Chain Monte Carlo for Exponential Random Graph Models, *Journal of Statistical Physics*, Vol. 165, Issue 4, pp 740-754, 2016

- S. Peluso, A. Mira, and P. Muliere, Robust Identification of Highly Persistent Interest Rate Regimes. *International Journal of Approximate Reasoning*, 83:102-117, 2017

- S. Peluso, A. Mira, P. Muliere, Learning vs Earning Trade-Off with Missing or Censored Observations: the Two-Armed Bayesian Nonparametric Beta-Stacy Bandit Problem. *Electronic Journal of Statistics*, 11:3368-3406, 2017

- R. Dutta, M. Schoengens, JP Onnela, A. Mira, Abcpy: A user-friendly, extensible, and parallel library for approximate bayesian computation. In *Proceedings of the Platform for Advanced Scientific Computing Conference* (p. 8). ACM, 2017

- V. Amati, A. Lomi, A. Mira, Social Network Modelling. *Annual Review of Statistics and its Applications.* Volume 5(1), pp 343-369, 2018

- B. Buonaguidi, A. Mira, Some optimal variance stopping problems revisited with an application to the Italian Ftse-Mib Stock Index. *Sequential Analysis*, 37. pp 90-101, 2018

- NJ Tierney, HJ Reinhold, A. Mira, M.Weiser, R. Burkart, C. Benvenuti, A. Auricchio, Novel relocation methods for automatic external defibrillator to improve out-of-hospital cardiac arrest coverage under limited resources, *Resuscitation*, 125, 83-89, 2018

- R. Dutta, A. Mira, JP Onnela, Bayesian inference of spreading processes on networks. *Proc. Royal Society. A*, 474(2215), 20180129, 2018

- M. Byshkin, A. Stivala, A. Mira, G. Robins, A. Lomi. Fast Maximum Likelihood estimation via Equilibrium Expectation for large network data, *Scientific Reports*, 8:1150, 2018

- S. Ranciati, M. Crispino, S. D'Angelo, A. Mira, Understanding dependency patterns in structural and functional brain connectivity through fMRI and DTI data. Studies in Neural Data Science, Springer volume. *Proceedings in Mathematics & Statistics*, 257, pp. 1 - 22, 2018

- R. Dutta, Z. F. Brotzakis , A: Mira, Bayesian Calibration of Force-fields from Experimental Data: TIP4P Water. *Journal of Chemical Physics*, 149, 154110, 2018

- F. Bartolucci, S. Bacci, A. Mira, On the role of latent variable models in the era of big data, *Statistics and Probability Letters*, 136, pp. 165-169, 2018

- R. Dutta, B. Chopard, J. Latt, F. Dubois, K. Z. Boudjeltia, A. Mira Parameter estimation of platelets deposition: Approximate Bayesian computation with high performance computing. *Frontiers in Physiology, section Computational Physiology and Medicine*, 9, 1128, 2018

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