Michela Cameletti
Curriculum Vitæ

(Last update June 2017)

University of Bergamo

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Project web site: https://sites.google.com/site/ephastat/

Professional experiences

Dec. 2008 - Present *Assistant professor* in Statistics at University of Bergamo, Department Management, Economics and Quantitative Methods.

Oct. 2007 - March 2008 *Research fellow* at Statistical and Applied Mathematical Science Institute (SAMSI), Research Triangle Park NC (USA). Project title "Environmental Sensor Networks", local coordinator Prof. A. Gelfand.

Nov. 2005 - Dec. 2008 *Research fellow* at University of Bergamo, Department of Information Technology and Mathematical Methods. Project title "Stochastic models for heterogeneous environmental monitoring networks", supervisor Prof. A. Fassò.

Education

- *Ph.D. in Statistics*, University of Milan-Bicocca (Italy), 2002-2006. Dissertation title "Spatio-temporal models for environmental data" (in Italian), supervisor Prof. A. Fassò.

- Summa cum Laude *MSc in Statistics, Demography and Social Sciences*, University of Milan-Bicocca (Italy), 2001.

Relevant grants

- Local investigator of the Bergamo research unit for the PRIN project "Environmental processes and human activities: capturing their interactions via statistical methods (EphaStat)". Main investigator: D. Cocchi (University of Bologna). https://sites.google.com/site/ephastat/

- Principal investigator of the Bergamo research unit for the FIRB2012 (Futuro in ricerca) project "Statistical modeling of environmental phenomena: pollution, meteorology, health and their interactions" (code RBFR12URQJ). Main investigator: F. Bruno (University of Bologna).

  http://stephiproject.it/

- Member of the EN17 project "Methods for the integration of renewable energy sources and the satellite monitoring of the environmental impact" founded by Lombardia region for 2011-2012 (principal investigator Prof. A. Fassò).

- Principal investigator of the project "GPU techniques for the Advanced Spatio-Temporal Statistical Modelling (GPU4MASST)" in collaboration with the CILEA Interuniversity Consortium for the Interdisciplinary Laboratory for Advanced Simulation (LISA) initiative.

- Principal investigator of local founds (MIUR ex-60%) at University of Bergamo for the projects: Computationally intensive methods for health and environment (2014), Studying the impact of air pollution on human health (2013), Statistical models for the estimate and the spatial prediction of macroseismic intensity (2011-2012), Computational intensive methods for the estimation and the mapping of spatio-temporal models (2010) and Comparison of hierarchical spatio-temporal models for air quality pollutants (2009).

- Member of the Italian PRIN 2006 research project *Statistical analysis and modeling of impact and risk for environmental phenomena in space and time*, principal investigator Prof. A. Fassò.

Scientific memberships and editorial activities

- Member of The International Environmetrics Society (TIES), of the Research group for Statistical Applications to Environmental Problems (GRASPA, http://www.graspa.org/), of the International Society for Bayesian Analysis (ISBA) and of the Italian Statistical Society (*SIS*).

- Referee for Atmospheric Environment, AStA Advances in Statistical Analysis, Environmental Science & Technology, Environmetrics, Italian Journal of Applied Statistics, Journal of Statistical Computation and Simulation, Journal of the Royal Statistical Society C, Spatial Statistics, Statistical Methods & Applications, Statistics in Medicine, Stochastic Environmental Research and Risk Assessment.

Institutional and organizational activities

Nov. 2012 - Oct. 2015 Member of the Research Committee (Consiglio della Ricerca) for the Department of Management, Economics and Quantitative Methods, University of Bergamo.

Dec. 2008 - Sept. 2012 Member of the Committee (Consiglio di Facoltà) of the Faculty of Economics and Business Administration and of the Department of Mathematics, Statistics, Computing and Applications, University of Bergamo.

- Member of the Program Committee for the UseR! 2013 Conference "The R User Conference 2013" (Albacete (S), 10-12/7/2013), `http://www3.uclm.es/congresos/useR-2013/`.

- Member of the Local Organizing Committee for the TIES 2009 Conference "Handling complexity and uncertainty in environmental studies" (Bologna (I), 5-9/7/2009), `http://www2.stat.unibo.it/ties2009/`.

Publications

- Books

  [1] M. Blangiardo, M. Cameletti (2015) *Spatial and Spatio-temporal Bayesian Models with R-INLA*, Wiley, ISBN: 978-1-118-32655-8. `http://eu.wiley.com/WileyCDA/WileyTitle/productCd-1118326555.html`

- Chapters in books

[1] M. Blangiardo, M. Cameletti. Computational Issues and `R` Packages for Spatial Data Analysis. In *Handbook of Spatial Epidemiology*, 2016, Eds. Lawson A.B., Banerjee S., Haining R.P., Ugarte M.D., CRC Press, ISBN 9781482253016.

[2] M. Cameletti, F. Finazzi. GPU algorithms for likelihood-based inference of environmental models with large datasets. In *Complex Models and Computational Methods in Statistics*, Grigoletto M., Lisi F., Petrone S. (Eds.), 2013, ISBN: 978-88-470-2870-8, DOI: 10.1007/978-88-470-2871-5_5.

- Peer-rewied articles

[3] F. Bruno, M. Cameletti, M. Franco-Villoria, F. Greco, R. Ignaccolo, L. Ippoliti, P. Valentini, M. Ventrucci. A survey on ecological regression for health hazard associated with air pollution, *Spatial Statistics*, 2016, 18, 276-299.

[4] M. Cameletti, V. De Rubeis, C. Ferrari, P. Sbarra, P. Tosi. An ordered probit model for seismic intensity data, *Stochastic environmental research and risk assessment*, 2016, 1-10, DOI 10.1007/s00477-016-1260-4.

[5] G. Bacaro, A. Altobelli, M. Cameletti, D. Ciccarelli, S. Martellos, M.W. Palmer, C. Ricotta, D. Rocchini, S.M. Scheiner, E. Tordoni, A. Chiarucci. Incorporating spatial autocorrelation in rarefaction methods: implications for ecologists and conservation biologists, *Ecological indicators*, 2016, 69, 233-238.

[6] M. Cameletti, F. Finazzi. An analysis of temporal and spatial patterns in Italian hospitalization rates for multiple diagnosis. *Spatial and spatio-temporal epidemiology*, 2016,19, 37-45.

[7] M. Blangiardo, F. Finazzi, M. Cameletti. Two-stage Bayesian model to evaluate the effect of air pollution on chronic respiratory diseases using drug prescriptions. *Spatial and spatio-temporal epidemiology*, 2016, 18, 1-12.

[8] V. Gómez-Rubio, M. Cameletti, F. Finazzi. Analysis of massive marked point patterns with stochastic partial differential equations, *Spatial Statistics*, 2015, 14, Part B, 179-196.

[9] M. Cameletti. The Change of support problem through the INLA approach, *Statistica e Applicazioni*, 2013 Special Issue, 29-43.

[10] M. Cameletti, R. Ignaccolo, D. Sylvan. Assessment and visualization of threshold exceedance probabilities in complex space-time settings: A case study of air quality in Northern Italy, *Spatial Statistics*, 2013, 5, 57-68.

[11] M. Blangiardo, M. Cameletti, G. Baio, H. Rue. Spatial and Spatio-Temporal models with `R-INLA`, *Spatial and Spatio-temporal Epidemiology*, 2013, 7, 39-55 [Erratum to Spatial and spatio-temporal models with R-INLA in Spat Spatio-tempor Epidemiol 4 (2013) 33-49].

[12] M. Cameletti, F. Lindgren, D. Simpson, H. Rue. Spatio-temporal modeling of particulate matter concentration through the SPDE approach. *ASTA Advances in Statistical Analysis*, 2013, 97, 2, 109-131.

[13] M. Cameletti, R. Ignaccolo, S. Bande. Comparing spatio-temporal models for particulate matter in Piemonte. *Environmetrics*, 22, 985-996, 2011.

[14] M. Cameletti, S. Martino. *Discussion* to the paper: An explicit link between Gaussian fields and Gaussian Markov random fields: the stochastic partial differential equation approach by F. Lindgren, H. Rue and J. Lindström. *Journal of the Royal Statistical Society B*, 2011, 73, 490.

[15] A. Fassò, M. Cameletti. A unified statistical approach for simulation, modelling, analysis and mapping of environmental data. *Simulation: the Society for Modeling and Simulation International*, 2010, 86, 3, 139-153.

[16] A. Fassò, M. Cameletti. The EM algorithm in a distributed computing environment for modelling environmental space-time data. *Environmental Modelling & Software*, 2009, 24, 1027-1035.

[17] O. Bodnar, M. Cameletti, A. Fassò, W. Schmid. Comparing air quality in Italy, Germany and Poland using BC indexes. *Atmospheric Environment*, 2008, 42, 8412-8421.

[18] A. Fassò, M. Cameletti, O. Nicolis. Air quality monitoring using heterogeneous networks. *Environmetrics*, 2007, 18, 245-264.

- Peer-rewied conference proceedings

[19] P. Berchialla, M. Blangiardo, M. Cameletti, F. Finazzi, M. Franco-Villoria, R. Ignaccolo (2014). *Spatial model for cardio-respiratory diseases hospital admission in Torino province*, in Proceedings of the METMA VII and GRASPA14 Conference. Torino (IT), 10-12 September 2014. GRASPAWP, ISSN 2037-7738.

[20] P. Berchialla, M. Blangiardo, M. Cameletti, F. Finazzi, M. Franco-Villoria, R. Ignaccolo (2014) *Spatial modelling for air pollution epidemiology: hospital admission risk for cardio-respiratory diseases in Torino province*, in S. Cabras, T. Di Battista and W. Racugno (Eds), Proceedings of the 47th Scientific Meeting of the Italian Statistical Society, Cagliari (IT), 11-13 June 2014. CUEC Cooperativa Universitaria Editrice Cagliaritana, ISBN: 978-88-8467-874-4.

[21] M. Blangiardo, M. Cameletti, F. Finazzi (2014) *Assessing the Effect of Air Pollution on Human Health Using Drug Sales Data*, in JSM Proceedings, Statistics and the Environment Section, Boston, 2-7 August 2014. American Statistical Association, Alexandria (VA, US), pp. 261-266, ISBN: 978-0-9839375-3-1.

[22] M. Cameletti. The INLA approach for disease mapping and health risk assessment. *Proceedings of the SIS2013 Statistical Conference, Advances in Latent Variables*, Brescia (I), June 19-21, 2013, ISBN: 978-88-343-2556-8.

[23] M. Cameletti, R. Ignaccolo, D. Sylvan. Assessing and visualizing probabilities to exceed air quality standards in complex space-time settings. *Proceedings of geoENV2012: IX Conference on Geostatistics for Environmental Applications*, Valencia (E), Sept. 19-21, 2012, Universitat Politècnica de València, ISBN: 978-84-8363-924-5.

[24] F. Finazzi, M. Cameletti. GPU algorithms for the estimation of environmental models based on large datasets. *Proceedings of S.Co. 2011: 7th Conference on Statistical Computation and Complex Systems*, Padova (I), Sept. 19-21, 2011, ISBN: 978-88-6129-753-1 (USB).

[25] S. Ghigo, M. Cameletti, R. Ignaccolo. Error-in-variables spatio-temporal model for PM_{10} mapping. *Proceedings of S.Co. 2011: 7th Conference on Statistical Computation and Complex Systems*, Padova (I), Sept. 19-21, 2011, ISBN: 978-88-6129-753-1 (USB).

[26] R. Ignaccolo, D. Sylvan, M. Cameletti. Modeling pollutant threshold exceedance probabilities in the presence of exogenous variables. *Proceedings of Spatial 2, Spatial Data Methods for Environmental and Ecological Processes - 2nd Edition*, Foggia (I), Sept. 1-2, 2011, CdP Service Ed. - San Severo (FG), ISBN: 978-88-96025-12-3.

[27] M. Cameletti, S. Ghigo, R. Ignaccolo. A spatio-temporal model for air quality mapping using uncertain covariates. *Proceedings of Spatial 2, Spatial Data Methods for Environmental and Ecological Processes - 2nd Edition*, Foggia (I), Sept. 1-2, 2011, CdP Service Ed. - San Severo (FG), ISBN: 978-88-96025-12-3.

[28] M. Cameletti, F. Lindgren, D. Simpson, H. Rue. Using the SPDE approach for air quality mapping in Piemonte region. *Proceedings of Spatial 2, Spatial Data Methods for Environmental and Ecological Processes - 2nd Edition*, Foggia (I), Sept. 1-2, 2011, CdP Service Ed. - San Severo (FG), ISBN: 978-88-96025-12-3.

[29] M. Cameletti, R. Ignaccolo. Comparing spatio-temporal hierarchical models for air quality data. *Proceedings of the 45th scientific meeting of the Italian Statistical Society (SIS)*, Padova (I), June 16-18, 2010, Cleup Ed. - Padova, ISBN: 978-88-6129-566-7.

[30] M. Cameletti. Distributed computing for spatio-temporal hierarchical models. *Proceedings of the SIS Conference Statistical Methods for the analysis of large data-set*, Pescara (I), Sept. 23-25, 2009, Cleup Ed. - Padova, ISBN: 978-88-6129-425-7.

[31] A. Fassò, M. Cameletti, P. Bertaccini. Uncertainty decomposition in environmental modelling and mapping. *Proceedings of the Summer Computer Simulation Conference 2007*, San Diego California (USA), July 15-18, 2007.

[32] A. Fassò, M. Cameletti. The EM algorithm for air quality spatio-temporal models. *Proceedings of the SIS Conference Rischio e Previsione*, Venezia (I), June 6-8, 2007, Cleup Ed. - Padova, ISBN: 978-88-6129-093-8.

[33] P. Bertaccini, A. Fassò, M. Cameletti. Urban mobility and atmospheric pollution within the Torino metropolitan area. *Proceedings of the SIS Conference Rischio e Previsione*, Venezia (I), June 6-8, 2007, Cleup Ed. - Padova, ISBN: 978-88-6129-093-8.

[34] Borgoni R., M. Cameletti, P. Quatto. Comparing Estimators of Animal Abundance: a Simulation Study. *Proceedings of the SIS Conference Statistica e Ambiente*, Messina (I), Sept. 21-23, 2005, Cleup Ed. - Padova, ISBN: 88-7178-531-2.

[35] Borgoni R., M. Cameletti, P. Quatto. Resampling methods for bias reduction of animal density estimators in point transect sampling. *Proceedings of the S.Co. Conference Modelli Complessi e Metodi Computazionali Intensivi per la Stima e la Previsione*, Bressanone (I), Sept. 15-17, 2005, Cleup Ed. - Padova.

[36] A. Fassò, O. Nicolis, M. Cameletti. A dynamical space-time calibration model for the airborne particular matter data. *Proceedings of the SCo Conference Modelli Complessi e Metodi Computazionali Intensivi per la Stima e la Previsione*, Bressanone (I), Sept. 15-17, 2005, Cleup Ed. - Padova.

- Other conference proceedings and posters

[37] Franco Biondi, M. Cameletti. Space-Time Hierarchical Kriging Extension of Precipitation Variability at 12-km Spacing from Tree-Ring Chronologies *Proceedings of the Third International Workshop on Climate Informatics National Center for Atmospheric Research*, Boulder, Colorado (US), September 26-27, 2013.

[38] M. Cameletti, R. Ignaccolo, S. Bande. Comparing air quality statistical models. *Proceedings of the TIES and GRASPA Conference Handling complexity and uncertainty in environmental studies*, Bologna (I), July 5-9, 2009.

[39] S. Bande, M. Cameletti, A. Gelfand, S. Ghigo, R. Ignaccolo. Comparing air quality statistical models. Poster for the *3rd National Conference on Particulate Matters PM2008*, Lecce (Italy), 6-8 October 2008.

[40] A. Fassò, M. Cameletti. Computer intensive procedures for mapping and modelling a spatio-temporal process and its uncertainty. *Proceeding of the TIES Conference Computational environmetrics*, Mikulov (CZ), August 16-20, 2007.

[41] A. Fassò, O. Nicolis, M. Cameletti. A statistical approach to heterogeneous monitoring networks. *Proceedings of the Ecomondo Conference*, Rimini (I), Oct. 26-29, 2005.

- Books in Italian

[42] M. Cameletti, V. Caviezel *STATISTICA. Richiami teorici ed esercizi svolti*, G. Giappichelli Editore, Torino, 2013, ISBN: 978-88-348-1798-8.

[43] M. Cameletti, G.C. Blangiardo, F. Crippa *Elementi di statistica*, Cortina Libreria, Milano, 2006, ISBN: 88-7043-118-5.

- Software

[44] `R` package `CMC: Cronbach-Mesbah Curve`, 2010, `http://cran.r-project.org/web/packages/CMC/`.

[45] R package `Stem: Spatio-temporal models in R`, 2009, `http://cran.r-project.org/web/packages/Stem/`.

Talks

2016 Invited talk *Statistical challenges in air pollution health risk assessment.* II Galician-Portuguese meeting of Biometry (BIOAPP 2016), Santiago de Compostela (ES), 30 June-02 July 2016.

2015 Invited talk *Assessing the effect of air pollution on human health using drug sales.* Spatial Statistics: Emerging Patterns, Avignone (F), 9-12 June 2015.

2015 Invited talk *Assessing the effect of air pollution on human health using drug sales.* XXXV Congreso Nacional de Estadística e Investigación Operativa (SEIO2015), Pamplona (ES), 26-29 May 2015.

2013 Invited discussant for the session *Graph theoretic methods for spatial data analysis.* 59th ISI World Statistics Congress, Hong Kong (China), 25-30 August 2013.

2013 Invited talk *The INLA approach for Bayesian air quality models.* 59th ISI World Statistics Congress, Hong Kong (China), 25-30 August 2013.

2013 Invited talk *The INLA approach for disease mapping and health risk assessment.* SIS2013 Statistical Conference, Advances in Latent Variables, Brescia (I), June 19, 2013,

2012 Invited talk *The SPDE-INLA approach for Bayesian air quality models*, Workshop on Energy, Air Quality and Sustainability: Models and Evidence (FAMEA project). Bergamo (I), November 2012.

2011 Contributed talk *Using the SPDE approach for air quality mapping in Piemonte region*, Spatial 2 Conference Spatial Data Methods for Environmental and Ecological Processes, Foggia (I), September 2011.

2011 Invited talk *Comparing spatio-temporal models for air quality data*, Biostatistics seminar at Imperial College London, London (UK), January 2011.

2010 Invited talk *Comparing spatio-temporal models for air quality data*, Biostatistics seminar at the Faculty of Statistics - University of Milano-Bicocca, Milano (I), September 2010.

2009 Contributed talk *Comparing spatio-temporal models for air quality data*, Pascal Workshop on spatiotemporal modelling, Edinburgh (UK), October 2010.

2009 Invited talk *Distributed computing for spatio-temporal hierarchical models*, SIS Conference Statistical Methods for the analysis of large data-set, Pescara (I), September 2009.

2009 Invited talk *Comparing air quality statistical models*, TIES and GRASPA Conference, Bologna (I), July 2009.

2008 Invited talk *Comparing hierarchical spatio-temporal models for air quality data* intermediate GRASPA workshop for the PRIN project *Metodi statistici e modelli spazio-temporali per il monitoraggio dell'inquinamento atmosferico*, Siena (I), March 2008.

2007 Invited talks *Introduction to geostatistics* and *Space-time modeling of PM10 in Piemonte: a dynamic approach*, GRASPA Worshop, Torino (I), December 2007.

2007 Invited talk *Computer intensive procedures for mapping and modeling a spatio-temporal process and its uncertainty*, TIES Conference, Mikulov (CZ), August 2007.

2007 Invited talk *Spatio-temporal models for environmental data*, workshop of Environmetrics and Stochastic processes, University of Bergamo, Bergamo (I), January 2007.

2006 Invited talk *Spatio-temporal models for environmental data*, European University Viadrina of Frankfurt Oder (D), September 2006.

2005 Contributed talk *Resampling methods for bias reduction of animal density estimators in Point Transect sampling*, SCo Conference Modelli Complessi e Metodi Computazionali Intensivi per la Stima e la Previsione, Bressanone (I), September 2005.

2005 Contributed talk *Comparing estimators of animal abundance: a simulation study*, SIS Conference Statistica ed Ambiente, Messina (I), September 2005.

Summer schools

2012 *GEOSTAT 2012* Summer School (spatio-temporal data analysis using `R` and Open Source GIS tools), Münster (D), 3-11 September 2012, `http://www.geostat-course.org/`.

2006 Applied Bayesian Statistics School *Hierarchical modelling approaches for spatial data in environmental and health sciences*, Bertinoro (I), 17-21 July 2006.

2004 SIS School *Approcci moderni all'analisi robusta di dati multidimensionali (Modern approches for the robust analysis of multidimensional data)*, Parma (Italy), 20-24 September 2004.

Visiting periods abroad

Oct.-Nov. 2012 Honorary Research Fellow at MRC Centre for Environment and Health Department of Epidemiology and Biostatistics, Imperial College London (UK).

Jan.-Feb. & Oct. 2011 Visiting researcher at the Department of Mathematical Sciences, Norwegian University of Science and Technology (NTNU), Trondheim (N).

Oct. 2007 - March 2008 Research Fellow at Statistical and Applied Mathematical Sciences Institute (SAMSI), Research Triangle Park, NC (USA); project title "Environmental Sensor Networks", local coordinator Prof. A. Gelfand.

Sept. 2006 Visiting scholar at the Department of Statistics, Europa-Universität Viadrina of Frankfurt Oder (D).

Awards, individual grants and fellowships

- Research award sponsored by University of Bergamo ("5 per mille 2016" funds) for the participation in a funded PRIN2015 project as local principal investigator.

- Research award sponsored by University of Bergamo ("5 per mille 2012" funds) for the research activity carried out during 2011.

- Research fellowship for a visiting period to be spent in 2012 at MRC Centre for Environment and Health Department of Epidemiology and Biostatistics, Imperial College London (UK) founded by the project FYRE - Fostering Young REsearchers, Bando Fondazione Cariplo "Promuovere la formazione di capitale umano di eccellenza".

- Best poster award for the poster titled "A spatio-temporal model for air quality mapping using uncertain covariates" (with S. Ghigo and R. Ignaccolo) presented at Spatial 2, Spatial Data Methods for Environmental and Ecological Processes - 2nd Edition, Foggia (I), Sept. 1-2, 2011.

- Research fellowship (October 2007 - March 2008) at the Statistical and Applied Mathematical Science Institute (SAMSI), Research Triangle Park, NC (USA).

Teaching

From 2009 Principal lecturer of *Statistics* (72 hours) at the Department of Management, Economics and Quantitative Methods (ex Faculty of Economics and Business Administration), University of Bergamo.

From 2011 Lecturer of *Probality and Statistics for Business and Finance* (24/36 hours in English) at the Department of Management, Economics and Quantitative Methods (ex Faculty of Economics and Business Administration), University of Bergamo.

2010 Lecturer of *Computational statistics for Finance* (24 hours) at the Faculty of Economics and Business Administration, University of Bergamo.

2005-2011 Tutor of *Statistics* at the Faculty of Engineering, University of Bergamo.

2002-2005 Tutor of *Statistics* at the Faculty of Psychology, University of Milan-Bicocca.

Languages knowledge

- Italian: native language.

- English: good.

- German: basics.

Computer knowledge

- Very good programming skills and data analysis using statistical software such as `R`, `Matlab`, `S-PLUS`, `SPSS`.

- Great familiarity with Windows, Linux and Mac Os X operating systems and their office applications.

- Good knowledge of Textprocessing in LaTeX.

- Programming language: basic knowledge of `C`.

- GIS system: basic knowledge of Quantum GIS (QGIS) and GRASS.

Autorizzo ai sensi della Legge 675/96 al trattamento dei dati personali da me trasmessi.