



## Program



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# Technical Program Summary

## Monday, July 7<sup>th</sup>

9:00-17:00 SHORT COURSES

Introduction To Geostatistics With RGeostats, by N. Desassis & D. Renard 1/2 L213

Advanced Stochastic Simulations, by C. Lantuéjoul & T. Romary L224

## Tuesday, July 8<sup>th</sup>

9:00-17:00 SHORT COURSES

Introduction To Geostatistics With RGeostats, by N. Desassis & D. Renard 2/2 L213

An Introduction To Bayesian Computing With INLA, by H. Rue & E. Krainski L224

17:00 REGISTRATION DESK OPENS

## Wednesday, July 9<sup>th</sup>

8:00 REGISTRATION DESK OPENS

8:30-9:00 OPENING SESSION  
Romain Soubeyran, Director, *MINES Paristech* L108

9:00-9:50 KEYNOTE LECTURE  
Håvard Rue, *Norwegian University of Science and Technology, Norway* L108

9:50-10:50 PLENARY SESSION L108

10:50-11:20 COFFEE BREAK Espace Maurice Allais

11:20-13:00 PARALLEL SESSIONS L108 – L109

13:00-14:20 LUNCH Espace Maurice Allais

14:20-15:40 PARALLEL SESSIONS L108 – L109

15:40-16:00 COFFEE BREAK Espace Maurice Allais

16:00-17:00 PARALLEL SESSIONS L108 – L109

17:00-18:30 POSTER SESSION Espace Maurice Allais

17:30-18:30    AUTHOR WORKSHOP  
                   Alfred Stein, *University of Twente, The Netherlands*  
                   Editor in Chief of *Spatial Statistics*  
                   Elaine van Ommen Kloeke *Publisher, Elsevier, The Netherlands* L108

## Thursday, July 10<sup>th</sup>

8:00	REGISTRATION DESK OPENS	
8:30-9:20	KEYNOTE LECTURE Laurent Bertino, <i>Nansen Environmental and Remote Sensing Center, Norway</i>	L108
9:20-10:40	PLENARY SESSION	L108
10:40-11:10	COFFEE BREAK	Espace Maurice Allais
11:10-12:50	PLENARY SESSION	L108
12:50-14:20	LUNCH	Espace Maurice Allais
14:20-15:40	PARALLEL SESSIONS	L108 – L109
15:40-16:00	COFFEE BREAK	Espace Maurice Allais
16:00-17:20	PARALLEL SESSIONS	L108 – L109
17:30-18:30	POSTER SESSION	Espace Maurice Allais
17:30-18:30	GEOENVIA ASSEMBLY	L109

## Friday, July 11<sup>th</sup>

8:00	REGISTRATION DESK OPENS	
8:30-9:20	KEYNOTE LECTURE Gerard Heuvelink, <i>Wageningen University, The Netherlands</i>	L108
9:20-10:40	PLENARY SESSION	L108
10:40-11:10	COFFEE BREAK	Espace Maurice Allais
11:10-12:50	PARALLEL SESSIONS	L108 – L109
12:50-14:20	LUNCH	Espace Maurice Allais
14:20-15:40	PARALLEL SESSIONS	L108 – L109
15:40-16:00	CLOSING SESSION WITH THE ANNOUNCEMENT OF THE GEOENV2016 VENUE	L108

## Social Program Summary

### Tuesday, July 8<sup>th</sup>

17:30-19:30 ICE BREAKER RECEPTION

Espace Maurice Allais

### Wednesday, July 9<sup>th</sup>

13:30-15:00

VISIT OF THE MUSEUM OF MINERALOGY

17:00-18:00

17:00

GUIDED TOUR OF THE MUSEUM OF MINERALOGY  
(reservation at the registration desk)

19:30

SECOND 5K GEOENV RACE

Jardin du Luxembourg

### Thursday, July 10<sup>th</sup>

13:30-15:00

VISIT OF THE MUSEUM OF MINERALOGY

17:00-18:00

19:45-00:00

GALA DINNER

Bateaux Mouches on the Seine river

### Friday, July 11<sup>th</sup>

13:30-15:00

VISIT OF THE MUSEUM OF MINERALOGY

16:00-18:00

## Author Guidelines

- Your slides (pdf or powerpoint) should be uploaded in the room of your session by the morning of your presentation  
You are also advised to meet your session chair in the presentation room during the break before the beginning of your session
- Poster presentations can be displayed from tuesday 8<sup>th</sup> evening till the end of the conference

# Oral Presentations

Wednesday, July 9<sup>th</sup>

## Plenary Session 1

L108

Chairman Jaime Gómez-Hernández

09:00-09:50 The Stochastic Partial Differential Equation (SPDE) Approach To Represent Gaussian Random Fields  
Håvard Rue

KEYNOTE

09:50-10:10 A New Class Of Anisotropy Models  
Denis Allard, Emilio Porcu and Rachid Senoussi  
GEOSTATISTICAL THEORY & NEW METHODOLOGIES

10:10-10:30 Geostatistical Combination Of Catch Data Derived From Fisheries And Research Surveys  
Mathieu Woillez, Pierre Petitgas, Jacques Rivoirard, Nicolas Bez and Patrick Berthou  
ECOLOGY & NATURAL RESOURCES

10:30-10:50 Multivariate Max-Stable Spatial Processes  
Marc Genton, Simone Padoan and Huiyan Sang  
SPATIO-TEMPORAL PROCESSES

## Stochastic Simulations 1

L108

Chairman Christian Lantuéjoul

11:20-11:40 Incorporation Of Geomorphological Information Into The Stochastic Simulation Of Karst Conduits  
Guillaume Rongier, Pauline Collon-Drouaillet and Marco Filipponi

11:40-12:00 Reproducing Chaos And Persistence In A Daily Rainfall Time-Series: A Comparison Between A Markov-Chain Approach And Multiple-Point Statistics  
Fabio Oriani, Raj Merothra, Julien Straubhaar, Grégoire Mariethoz, Ashis Sharma and Philippe Renard

12:00-12:20 Conditional Object-Based Simulations Of "Flexible" Objects  
Alexandre Walgenwitz, Denis Allard and Pierre Biver

- 12:20-12:40 Methodology For Simulating Fractures In A Fault Zone: Analysis Of The Data From "Cirque De Navacelles"  
*Hélène Beucher, Jean-Paul Chilès, Caroline Mehl, Didier Renard, Cé-cile Allanin and Bernard Bourguin*
- 12:40-13:00 Geometrical Modeling Of Karstic Diagenesis In Carbonate Systems  
*Pierre Biver and Richard Labourdette*

## Geostatistical Theory & New Methodologies 1

L109

Chairman Peter Atkinson

- 11:20-11:40 A Multivariate Nonstationary Covariance Function For Automatic Classification Of Remotely Sensed Hyperspectral Data  
*Anna Chlingaryan, Arman Melkumyan, Richard Murphy and Sven Schneider*
- 11:40-12:00 Non-Linear Multivariate Geostatistical Modelling Using Pair-Copulas  
*Gnai Nishani Musafer, Mery Helen Thompson, Rodney Wolff and Erhan Kozan*
- 12:00-12:20 Realistic Non-Stationary Spatial Interpolation  
*Claus P. Haslauer, Theresia Heisserer and András Bárdossy*
- 12:20-12:40 A Model-Based Geostatistical Approach For Skew Radioactivity Data  
*Luca Bagnato and Marco Minozzo*
- 12:40-13:00 Experimental Variogram For Data With Measurement Errors  
*Didier Renard, Nicolas Desassis, Paolo Ruffo and Alberto Consonni*

## Geostatistical Theory & New Methodologies 2

L108

Chairman Jean-Paul Chilès

- 14:20-14:40 Modeling And Updating Joint Uncertainty In Trend And Training Image In Multiple-Point Geostatistics  
*Celine Scheidt and Jef Caers*
- 14:40-15:00 The Choice Of The Coordinates' Space Of Residuals When Estimating The Coefficients Of Thermal Response Test  
*Roberto Bruno, Stefano Bonduà, Sara Focaccia and Francesco Tinti*
- 15:00-15:20 Universal Kriging With Training Images  
*Lewis Li, Thomas Romary and Jef Caers*
- 15:20-15:40 Geostatistical Methodologies For Spatial Accuracy Assessment And Update Of Land Cover Maps  
*João Carneiro and Maria João Pereira*

## Surface & Subsurface Hydrology

L109

Chairman Philippe Renard

- 14:20-14:40    Hydraulic Parameterization Of 3D Subsurface Models: From Measurement-Scale To Model-Scale  
*Jan L. Gunnink, Jan Stafleu and Denise Maljers*
- 14:40-15:00    Geophysical Stereology: Quantifying Uncertainty Of 3D Object Parameters From 2D Gpr Data Of A Braided River System. Application To The Tagliamento River (Ne Italy)  
*Emanuel Huber, Peter Huggenberger and Jef Caers*
- 15:00-15:20    A Geostatistical Methodology For The Performance Evaluation Of Groundwater Quality Monitoring Networks  
*Hugo Enrique Júnez, Julián González, Jesús Emmanuel Reyes and Graciela Herrera*
- 15:20-15:40    Simulation Of Erosion Processes And Their Impact On The Water Quality In A Hydro-Ecological Model: Use Of Geostatistics As A Validation Tool  
*Lauriane Vilmin, Nicolas Flipo, Chantal de Fouquet and Michel Poulin*

## Geology

L108

Chairman Thomas Romary

- 16:00-16:20    Building A Geological Reference Platform Using Sequence Stratigraphy Combined With Geostatistical Tools  
*Bernard Bourguine, Éric Lasseur, Aurélien Leynet, Guillaume Bardinier, Carole Ortega and Benoît Issautier*
- 16:20-16:40    Geometrical Characterization Of Precious Marble Natural Resources By Statistical Analysis Of Structural Data From The Apuan Alps (Italy)  
*Enrico Guastaldi, Giovanni Massa, Ivan Callegari and Diego Pierucioni*
- 16:40-17:00    Identify Model Scale Parameters With Ground Penetrating Radar Data  
*Guillaume Pirot, Emanuel Huber, Tobias Lochbühler, Philippe Renard, Céline Scheidt and Julien Straubhaar*



## Ecology & Natural Resources 1

L109

Chairman Denis Allard

- 16:00-16:20    Functional Kriging In Oceanography: Predicting Chlorophyll-A Profiles  
S  verine Bayle, David Nerini and Pascal Monestiez
- 16:20-16:40    Cokriging Of Proportions To Estimate Tuna Distribution From Vessels' Trajectories  
Emily Walker and Nicolas Bez
- 16:40-17:00    On the spatial interpolation of biodiversity indices  
Nicolas Bez, Victoria Suntov, Jean-Marc Fromentin, Mathieu Woillez and Bastien M  rigot

## Thursday, July 10<sup>th</sup>

### Plenary Session 2

L108

Chairman Amilcar Soares

8:30-9:20      The use of Geostatistics for data assimilation in operational oceanography  
Laurent Bertino

KEYNOTE

9:20-9:40      Beyond Ensemble Kalman Filter  
J. Jaime Gómez-Hernández and Teng Xu

INVERSE MODELING

9:40-10:00      Application Of Multiple-Point Geostatistics On Groundwater Flow And Transport In Media With Complex Geological Heterogeneity: Lessons Learnt And Remaining Challenges  
Marijke Huysmans and Alain Dassargues

SURFACE & SUBSURFACE HYDROLOGY

10:00-10:20      Multiple Point Statistics: How Good Is My Training Image?  
Philippe Renard, Alexandre Walgenwitz, Julien Straubhaar, Roland Froidevaux and Dimitri D'Or

STOCHASTIC SIMULATIONS

10:20-10:40      Bayesian Approach For Estimating The Space-Time Variability Of Groundwater Level In A Sparsely Monitored Basin On A Mediterranean Island  
Emmanouil A. Varouchakis, Dionissios T. Hristopulos and George P. Karatzas

SPATIO-TEMPORAL PROCESSES

### Plenary Session 3

L108

Chairman Jacques Rivoirard

11:10-11:30      Environmental Data Modelling Using Extreme Learning Machines  
Mikhail Kanevski and Michael Leuenberger

GEOSTATISTICAL THEORY & NEW METHODOLOGIES

11:30-11:50      A Generalized Convolution Model And Estimation For Non-Stationary Random Fields  
Francky Fouedjio, Nicolas Desassis and Jacques Rivoirard

GEOSTATISTICAL THEORY & NEW METHODOLOGIES

- 11:50-12:10 Algorithms For Conditional Simulation Of Max-Stable Processes  
Liliane Bel, Christian Lantuéjoul and Aurélien Bechler  
 STOCHASTIC SIMULATIONS
- 12:10-12:30 A Novel Approach To Kriging For Functional Compositional Data With  
 Application To Particle-Size Curves In Heterogeneous Aquifers  
Alessandra Menafoglio, Alberto Guadagnini and Piercesare Secchi  
 GEOSTATISTICAL THEORY & NEW METHODOLOGIES
- 12:30-12:50 Fast Conditional Simulation Of Spatial Random Fields With Equality  
 And Inequality Constraints And Arbitrary Marginals  
Sebastian Hörning and András Bardóssy  
 STOCHASTIC SIMULATIONS

## Geostatistical Theory & New Methodologies 3

L108

Chairwoman Maria João Pereira

- 14:20-14:40 Experimental Variograms Of The Underlying Gaussian Random  
 Functions In The Truncated Pluri-Gaussian Models  
Nicolas Desassis, Didier Renard, Hélène Beucher, Stephanie Hamil-  
ton and Joan Esterle
- 14:40-15:00 A New Parametric Class Of Cross-Covariance Functions For Multi-  
 variate Spatio-Temporal Random Fields  
Marc Bourotte and Denis Allard
- 15:00-15:20 Efficient Prediction Designs For Random Fields  
Werner Müller, Luc Pronzato, Joao Rendas and Helmut Waldl
- 15:20-15:40 Bayesian Data Fusion Applied To Soil Drainage Classes Spatial Map-  
 ping  
Sarah Gengler and Patrick Bogaert

## Ecology & Natural Resources 2

L109

Chairman Nicolas Jeannée

- 14:20-14:40 Estimating Herbivore Species Abundance And Distribution Patterns  
 In Kruger National Park South Africa Using Area To Point Poisson  
 Kriging And P-Field Simulation  
Ruth Kerry, Ben Ingram, Pierre Goovaerts and Izak Smit
- 14:40-15:00 Complex Estimation Methods For Simple Fish  
Claire Saraux and Nicolas Bez

- 15:00-15:20 Mapping The Habitats Of High Fish Concentrations With Non-Linear And Multivariate Geostatistics  
*Pierre Petitgas, Mathieu Woillez, Mathieu Doray, Jacques Massé and Jacques Rivoirard*
- 15:20-15:40 Towards Regionalised Biodiversity Indicators For Fisheries Management  
*Ute Mueller and Brent Wise*

## Stochastic Simulations 2

L108

Chairman Hans Wackernagel

- 16:00-16:20 Conditional Simulations For Fields Of Extreme Precipitation  
*Aurélien Bechler, Liliane Bel and Mathieu Vrac*
- 16:20-16:40 A Stochastic Space-Time Model For Intermittent Precipitation Occurrences  
*Ying Sun*
- 16:40-17:00 Estimation Of Long-Term Volcanic Hazard Under Evolving Tectonic Conditions At 1 Ma Timeframe  
*Olivier Jaquet, Christian Lantuéjoul and Junichi Goto*
- 17:00-17:20 Likelihood-Representative Sampling From (Log)Normal Random Field Models  
*Phaedon Kyriakidis, Stelios Liodakis and Petros Gaganis*

## Other

L109

Chairman Mikhail Kanevski

- 16:00-16:20 Water Of The Lake Of Geneva During Some Decades: Water Circulation, Temperatures, Pollutants Depicted With Spatio-Temporal Geostatistics And Machine Learning  
*Michel Maignan, Mikhail Kanevski, Roch Villard and Audrey Klein*
- 16:20-16:40 Trace Element Abundance And Renal Disease In Northern Ireland  
*Chloe Floyd, Jennifer McKinley, Ulrich Ofterdinger, Damian Fogarty and Peter Atkinson*
- 16:40-17:00 Characterization Of Desertification Indicators Based On Earth Observation Data  
*Maria João Pereira*
- 17:00-17:20 Wave Propagation In Randomly Heterogeneous Geologic Media: Space-Time Structure And Upscaling.  
*Rachid Ababou*

Friday, July 11<sup>th</sup>

## Plenary Session 4

L108

Chairman Roland Froidevaux

- 8:30-9:20      Much ado about spatial uncertainty  
Gerard Heuvelink KEYNOTE
- 9:20-9:40      Predictive Mapping Of Soil Properties At High Resolution By Component Wise Gradient Boosting  
Madlene Nussbaum, Andreas Papritz, Lorenz Walthert and Andri Baltensweiler  
SOIL CONTAMINATION & PEDOLOGY
- 9:40-10:00      Potential Mapping From Geochemical Surveys Using A Cox Process  
Raimon Tolosana-Delgado, K. Gerald van den Boogaart and Helmut Schaeben  
ECOLOGY & NATURAL RESOURCES
- 10:00-10:20      Inverse Modeling Of Moving Average Kernels For 3D Gaussian Simulation  
Oscar Peredo, Julián M. Ortiz and Oy Leuangthong  
GEOSTATISTICAL THEORY & NEW METHODOLOGIES
- 10:20-10:40      Inverting Hydraulic Heads In An Alluvial Aquifer Constrained With Electrical Resistivity Tomography Data Through Multiple-Point Statistics And Probability Perturbation Method: A Case Study  
Thomas Hermans, Céline Scheidt, Jef Caers and Frédéric Nguyen  
SURFACE & SUBSURFACE HYDROLOGY

## Air quality

L108

Chairman Werner Müller

- 11:10-11:30      Automated Screening Of Spatio-Temporal Anomalies In Long Term / Large Scale Air Quality Observation Time Series  
Oliver Kracht and Michel Gerboles
- 11:30-11:50      Structural Analysis And Modeling Choice For Air Quality Data  
Claudia Cappello, Sandra De Iaco and Donato Posa
- 11:50-12:10      Air Quality Index Revisited From A Compositional Approach  
Eusebi Jarauta-Bragulat, Carme Hervada-Sala and Juan José Egozcue
- 12:10-12:30      A Spatially-Varying Coefficient Model For The Air Pollution Mapping  
Nicholas A.S. Hamm, Andrew O. Finley and Martijn Schaap

- 12:30-12:50 Data Assimilation For Urban Air Quality Simulation  
Vivien Mallet, Anne Tilloy, David Poulet, Céline Pesin and Fabien Brocheton

## Soil contamination & Pedology

L109

Chairman Pascal Monestiez

- 11:10-11:30 Use Of Geostatistics For Contaminated Sites Characterization: Experience Feedback, Recommendations For Practical Implementation And Needs For Further Research And Development  
Nicolas Jeannée, Hélène Demougeot-Renard, Stéphane Belbèze and Bénédicte Couffignal
- 11:30-11:50 Risk Assessment Of Soil Compaction In Walloon Region (Belgium)  
Dimitri D'Or and Marie-France Destain
- 11:50-12:10 Spatial And Temporal Changes In Soil Organic Carbon Assessment Using An Integrated Geostatistical And Compositional Data Analysis Approach  
Jennifer M. McKinley, Raimon Tolosana-Delgado, Antoinette Keaney, Alastair Ruffell and Peter M. Atkinson
- 12:10-12:30 Geostatistical Study To Support Sustainable Remediation Of A Site With Historical Lead Impact  
Maarten Cuypers, Annelies Jacobs, Perrine Martin, Claire Faucheux and Nicolas Jeannée
- 12:30-12:50 Integration Of Emi Sensor Data In Soil Sampling Scheme Optimization Using Continuous Simulated Annealing  
Annamaria Castrignanò, Emanuele Barca, Gabriele Buttafuoco, Daniela De Benedetto and Giuseppe Passarella

## Inverse Modeling

L108

Chairwoman Céline Scheidt

- 14:20-14:40 Approximate Model Based On Simplified Physics And Functional Principal Component To Accelerate Monte Carlo Markov Chain  
Laureline Josset, Vasily Demyanov, Ahmed H. Elsheikh and Ivan Lunati
- 14:40-15:00 Geostatistical 3D Geomechanical Models Constrained By Pre-Stack Seismic Data  
Leonardo Azevedo, Maria João Pereira, Luis Guerreiro and Amílcar Soares

- 15:00-15:20 Comparison Of Pest'S Null Space Monte Carlo With A Bayesian Approach  
Damian Glenz, Philippe Renard and Philip Brunner
- 15:20-15:40 Bayesian First Arrival Travel Time Tomography By Interacting Mcmc  
Thomas Romary, Alexis Bottero, Alexandrine Gesret, Nicolas Desassis and Mark Noble

## Geostatistical Theory & New Methodologies 4

L109

Chairman Dimitri D'Or

- 14:20-14:40 Kriging For Data Collected Over Large Areas Of The Earth's Surface  
Alexander Gribov and Konstantin Krivoruchko
- 14:40-15:00 Multivariate Modelling Of Interconnected Variables With Different Characteristics  
Arman Melkumyan
- 15:00-15:20 Spatial Regression For General Purpose Software  
Konstantin Krivoruchko and Alexander Gribov
- 15:20-15:40 How To Check For Connectivity In Geomodels  
Jean-Marc Chautru and Renaud Meunier

# Poster Presentations

Espace Maurice Allais

## Geostatistical Theory & New Methodologies

Spatio-temporal variability of nutrients in irrigation waters and its contribution on fertilization of olive groves in Crete island, Greece

Andreas Panagopoulos, George Arampatzis, Evangelos Hatzigiannakis, Theodore Karyotis, Sophia Stathaki and Evangelos Tziritis

Updating the Soil Map of the Netherlands in areas with peat soils

Dick Brus, Bas Kempen, Folkert de Vries

Geostatistical Analysis of Geophysical Properties in a Geothermal Reservoir Study

Yixi Gu, Wolfram Rühaak, Kristian Bär and Ingo Sass

Spatial prediction of bulk density estimates obtained with pedotransfer functions

Eliana de Souza, Bas Kempen, Gerard B.M. Heuvelink and Elpídio Inácio Fernandes Filho

Surface Air Temperature Mapping from Remote Sensing and Geographical Data

Raquel Niclòs, José Antonio Valiente, Maria Jesús Barberà and Vicente Caselles

Variogram-based Template Selection for Multiple-point Geostatistics

Xue Li, Tao Huang, Wei Peng and DeTang Lu

The dynamics and spatial variability of soil organic carbon content under grasslands in Southern Karelia

Valeriia Sidorova and Pavel Krasilnikov

Geostatistical modeling of heavy metal stream sediment samples

Ahcène Benamghar and J. Jaime Gómez-Hernández

Spatial and Time Variation in Underground Water Quality Parameters in Klodzko Water Intake (SW Part of Poland) Using Geostatistical Methods

Barbara Maria Namysłowska-Wilczyńska

Calculation of annual 90th percentile on time-series of nitrate concentrations in surface water

Mariangela Donati, Chantal de Fouquet, Gaëlle Deronzier and Katell Petit

A Enhanced Edge Based Algorithm for Thermal Image Sharpening

Martin Bayala, Raúl Rivas and Raquel Niclòs

Spatial Relationship Quantification between Environmental, Socioeconomic and Health Data at Different Geographic Levels

Mahdi-Salim Saib, Julien Caudeville, Florence Carré, Olivier Ganry and Alain Trugeon

A neural network residual cokriging approach to predict soil separates in a Mediterranean basin

Michael Blaschek and Rainer Duttmann

A Urban Geochemical Background Database for Contaminated Land Management

Laurent Rouvreau, Céline Blanc, Patrice Piantone, Françoise Bodenan, Aurélien Leynet,



*Hélène Roussel, Jean-François Brunet, Hubert Leprond, Lucien Callier, Maxime Jarzabek, Frédéric Guét, Jean-François Malon and Daniel Hubé*

Applied Geo-Information in Spatial Prediction of Landslide Hazards Case Study in Red River Basin, Vietnam

*Xuan Luan Truong, Hung Long Ngo, Chi Cong Nguyen and Xuan Quang Truong*

Simulation of hydraulic heterogeneity and upscaling permeability and dispersivity in heterogeneous sandy-clay formation

*Veronica Bakshevskaia and Sergey Pozdniakov*

Estimation of Non-Stationary Random Fields through Space Deformation

*Francky Fouedjio, Nicolas Desassis, Thomas Romary and Jacques Rivoirard*

Digital soil mapping of chemical properties, pH and Al, the North, Northwest and Serana region of Rio de Janeiro, Brazil

*Sandra Fernandes de Andrade*

Spatio-temporal Wireless Network Performance Forecast with Using Geostatistical Simulation Methods

*Anna Kamińska-Chuchmała*

Space-time model to predict atmospheric pollutant concentration levels based on Block Sequential Simulation.

*Rita Durão, Maria João Pereira and Amílcar Soares*

Geostatistical approach to National Forest Inventory data: a study case in the Province of Trento (Italy)

*Maria Rizzo, Fabio Pastorella, and Patrizia Gasparini*

Methodological and practical aspects of geostatistical bootstrap for quantifying global and local soil contamination uncertainty

*Michel H. Garcia, Jean-Baptiste Mathieu and Valérie S. Garcia*

Particulate matter and meteorological conditions: a multivariate spatio-temporal analysis

*Claudia Cappello, Monica Palma and Donato Posa*

A New Spatial Copula Function for Modeling Spatial Dependency and Interpolation

*Mohsen Mohammadzadeh and Mehdi Omid*

Assessing the feasibility of geostatistical approaches to quantify stockpiles characterization using variogram modeling (with case examples from two Iron stockpiles, Iran)

*Sara Kasmaee and Roberto Bruno*

Spatial Point Pattern Analysis of Soil Survey Sampling Locations

*Alessandro Samuel-Rosa, Gerard Heuvelink, Gustavo Vasques and Lúcia Anjos*

Modeling Sedimentary Structures using Non Uniform Rational B-Splines

*Jeremy Ruii, Guillaume Caumon, Sophie Viseur and Christophe Antoine*

Influence of heterogeneity on heat transport simulations in shallow geothermal systems

Javier Rodrigo-Illarri, Max Reisinger, Jaime Gómez-Hernández

## Stochastic Simulations

Application of stochastic simulation techniques in nation-wide 3D subsurface models of the Netherlands

Denise Maljers, Jan Stafleu, Jeroen Schokker, Roula M. Dambrink and Freek S. Busschers

Conditioning Multiple Point Statistics simulations to block data using Direct Sampling

Julien Straubhaar, Philippe Renard and Grégoire Mariethoz

Assessment of multiple point simulation quality focusing on connected geobodies

Guillaume Rongier, Pauline Collon-Drouaillet, Philippe Renard, Julien Straubhaar and Judith Sausse

## Forestry & Agriculture

Comparison of methods to estimate the sampling variance of design-based estimates of spatial means from systematic random sampling: application to the French soil monitoring network data

Nicolas P.A. Saby, Dick J. Brus, Hakima Boukir and Dominique Arrouays

## Remote Sensing

Field sampling and analytical measurements for validation of geostatistical interpolation of airborne gamma-ray data

Enrico Guastaldi, Marica Baldoncini, Alessio Barbagli, Giampietro Bezzon, Giampaolo Buso, Ivan Callegari, Tommaso Colonna, Giovanni Fiorentini, Merita Kaçeli Xhixha, Fabio Mantovani, Giovanni Massa, Carlos Rossi Alvarez, Virginia Strati and Gerti Xhixha

Downscaling coarse resolution RS and climatic data with the support of covariates

Laura Poggio and Alessandro Gimona

## Soil Contamination & Pedology

Kriging based modelling of the 3D chemical composition of soil by integrating 2D chemical maps with 3D X-ray computed micro-tomographic images of soils.

Simona Hapca, Clare Wilson, Phillipe Baveye and Wilfred Otten

Multiscale spatial modelling of radioactive pollutions with a kernel learning algorithm

Vasily Demyanov and Mikhail Kanevski

3D modelling of Scottish soil properties

Laura Poggio and Alessandro Gimona

Geostatistical modeling of soil contaminated improvement with on-site analysis

Gaël Plassart and Priscillia Semaoune

Applying geostatistics to estimate TCE soil characterization and improve associated remediation cost

François Garcin, Vincent Besnier and David Tognet

## Spatio-Temporal Processes

GWSDAT (GroundWater Spatiotemporal Data Analysis Tool)

Wayne Jones

Tool for the identification of significant and sustained upward trends in groundwater in accordance with the Water Framework Directive

Nolwenn Croiset, Benjamin Lopez and Bernard Bourguine

Geostatistical analysis of water quantity and quality spatiotemporal data

Larissa Valmy, Chantal de Fouquet and Bernard Bourguine

## Surface & Subsurface Hydrology

New methodology to determine water quality in a Spanish river based on Shewhart-Type-Control- Chart Runs Rules for Functional Data

Carla Iglesias, Joaquín Sancho, Javier Martínez, Javier Del Valle, Jorge Pastor, María Araújo and Javier Taboada Castro

Building piezometric maps: contribution of geostatistical tools

Bernard Bourguine, Nicolas Pedron and Eric Lavie

Survey of Methods to Define the Equivalent Permeability Kij in Heterogeneous, Composite, and Fractured Media

Rachid Ababou and Philippe Renard

Large-scale Probabilistic Optimization Using Non-Stationary Geostatistics for Uncertainty Assessment of Groundwater Flow and Solute Transport

Bart Rogiers, Eric Laloy, Matej Gedeon, Alain Dassargues, Marijke Huysmans, Okke Batelaan and Dirk Mallants

Assessing climate impacts on low flows and droughts combining upward and downward approaches

Gregor Laaha, Daniel Koffler, Klaus Haslinger, Wolfgang Schöner, Juraj Parajka, Alberto Viglione, Judith Zehetgruber, Christina Yassouridis and Günter Blöschl

Delineation of highly permeable backbones in heterogeneous hydraulic conductivity fields

Alina Tyukhova, Matthias Willmann and Wolfgang Kinzelbach

Development of a 3D geometric model for a scarce data multi-level aquifer system based on inequality-constrained kriging Case of the "Jeffara de Medenine" aquifer (SE Tunisia)

Hayet Chihi, Nicolas Jeannée, Habib Belayouni and Mourad Bedir

## Inverse Modeling

Stochastic inverse modelling of groundwater flow using proxy simulations based on DFN models

Mohammed Amine Chaoui, Philippe Renard, David Ginsbourger and François Bertone

## CO<sub>2</sub> Sequestration

Scale-up of Reactive-Diffusive Processes in Heterogeneous Media

Harpreet Singh and Sanjay Srinivasan

## Air Quality

Air emissions of sulphur oxides and total suspended particulates from combustion plants and domestic sector in Silesia - Analysis using geostatistics

Damian Zasina and Jarosław Zawadzki

Geostatistical generation of precipitation time series to consider wet deposition in atmospheric dispersion modeling

Christian Berndt and Uwe Haberlandt

A pragmatic approach to estimate probabilities of exceeding limit values in air quality - Application to PM<sub>10</sub> and O<sub>3</sub>

Maxime Beauchamp, Laure Malherbe and Chantal de Fouquet

## Climate Change

Paleotemperature reconstructions using a spatio-temporal multicore Bayesian model

Liisa Ilvonen and Lasse Holmström

Circulation controls of the spatial structure of maximum daily precipitation over Poland

Alfred Stach

## Ecology & Natural Resources

Fishermen spatial behavior and fish acoustic biomass: two sides of the same coin?

*Rocio Joo, Daniel Grados, Sophie Bertrand, Marilu Bouchon, Arnaud Bertrand, Marceliano Segura, Ronan Fablet, Mariano Gutierrez and Nicolas Bez*

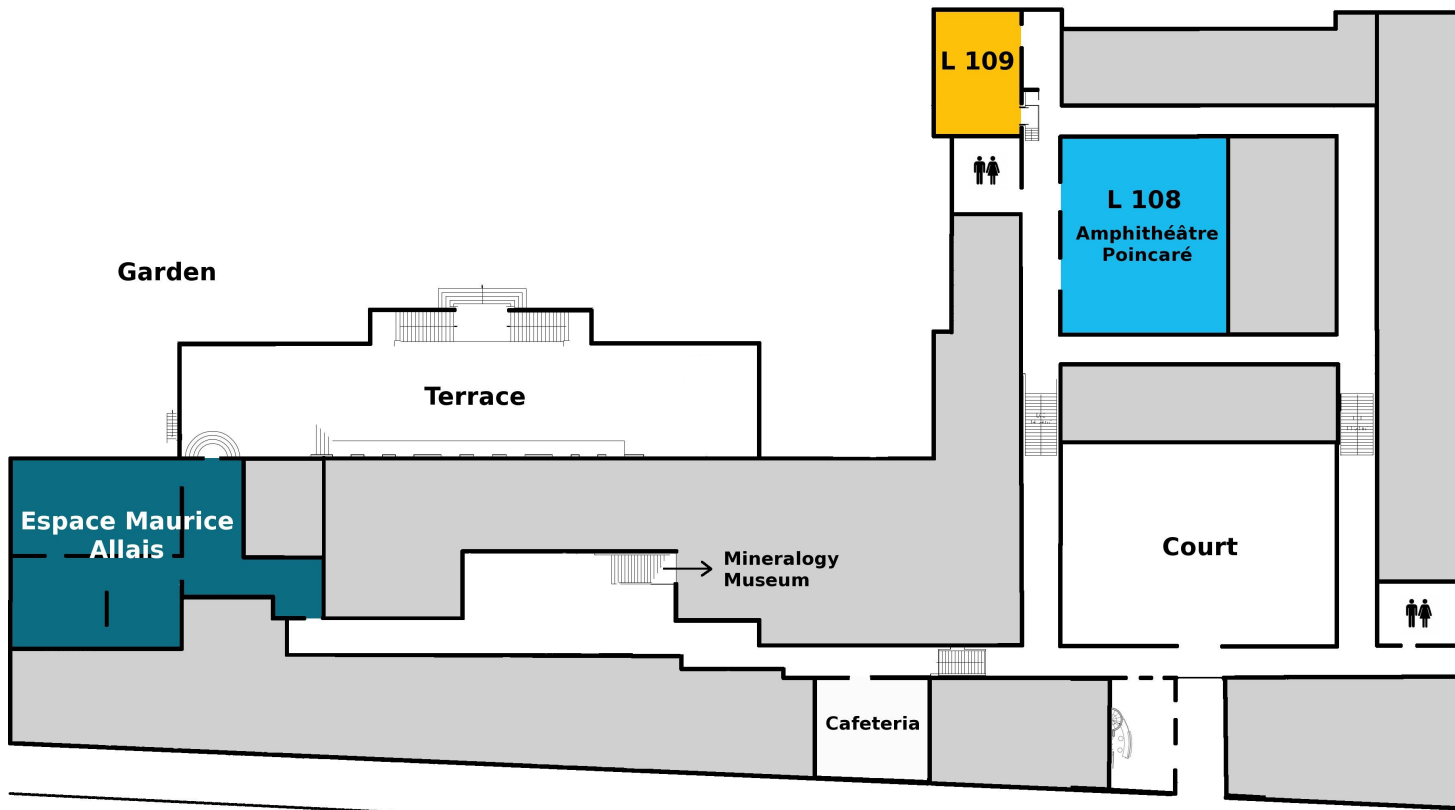
Estimation And Validation Of The Hourly Components Of Solar Irradiation Using In Situ And Satellite Data


*Melita Perčec Tadić and Renata Sokol Jurković*

New Approach In Data Analysis From Areas With Limited Ornithological Data: Automated Modelling Of Small Passerine Densities From Approximate Transects

*Andreja Radović, Gordan Lukač and Nataša Tepić*





←  **Luxembourg**  
(rue de l'abbé de l'épée)

**Boulevard Saint Michel**

**Entrance**

 **Luxembourg** →  
(Boulevard Saint Michel-Jardin)

Wednesday 9 <sup>th</sup>		Thursday 10 <sup>th</sup>		Friday 11 <sup>th</sup>	
Opening Session Keynote lecture Plenary session 1 L108 8:30-10:50		Keynote lecture Plenary session 2 L108 8:30-10:40		Keynote lecture Plenary session 4 L108 8:30-10:40	
Coffee break Espace M. Allais 10:50-11:20		Coffee break Espace M. Allais 10:40-11:10		Coffee break Espace M. Allais 10:40-11:10	
Simulations 1 L108 11:20-13:00	Theory 1 L109 11:20-13:00	Plenary Session 3 L108 11:10-12:50		Air Quality L108 11:10-12:50	Soil L109 11:10-12:50
Lunch break Espace M. Allais 13:00-14:20		Lunch break Espace M. Allais 12:50-14:20		Lunch break Espace M. Allais 12:50-14:20	
Theory 2 L108 14:20-15:40	Hydrology L109 14:20-15:40	Theory 3 L108 14:20-15:40	Ecology 2 L109 14:20-15:40	Inverse Modeling L108 14:20-15:40	Theory 4 L109 14:20-15:40
Coffee break Espace M. Allais 15:40-16:00		Coffee break Espace M. Allais 15:40-16:00		Closing session L108 15:40-16:00	
Geology L108 16:00-17:00	Ecology 1 L109 16:00-17:00	Simulations 2 L108 16:00-17:20	Other L109 16:00-17:20		
Poster Session Espace M. Allais 17:00-18:30	Author Workshop L109 17:30-18:30	Poster Session Espace M. Allais 17:20-18:30	geoENVia Assembly L109 17:30-18:30		
5km race Jardin du Luxembourg 19:30		Gala dinner Bateaux Mouches 19:30			