

14<sup>TH</sup>

INTERNATIONAL  
CONFERENCE ON  
GEOSTATISTICS FOR  
ENVIRONMENTAL  
APPLICATIONS



geoENV  
JUNE 22-24  
PARMA 2022



CONFERENCE PROGRAM



UNIVERSITÀ  
DI PARMA

# Preface

The 14<sup>th</sup> International Conference on Geostatistics for Environmental Applications (geoENV2022) will take place in Italy, for the first time, at the Campus of the University of Parma from Wednesday June 22 to Friday June 24, 2022. After two years of restrictions due to Covid-19 pandemic, the conference returns in presence. About 80 people from all over the world registered to the conference.

Colleagues who reach Parma on Tuesday June 21 are welcome to the icebreaker event at 18:30 in the main building of the University of Parma, in downtown Parma. During the icebreaker, attendees will be able to pre-register and have a drink with friends.

The 5K race will take place at Parco Ducale on Wednesday evening. All geoENVerS are invited to run or to support their friends.

On Thursday evening, the Gala dinner will be at the exit of the world's largest Labyrinth. (Only for those who manage to exit the labyrinth! 😊)

In the following, information on keynote speakers, social and scientific programs are detailed.

Austria Colombia Saudi Arabia Germany Turkey  
Greece Australia Netherlands Switzerland France  
Japan Ireland United States of America Portugal Iran  
Spain Belgium United Kingdom Canada Italy  
Cyprus Kazakhstan Argentina India

# Organizing Committee



**UNIVERSITÀ  
DI PARMA**

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Marco D'Oria (Co-Chair)

Maria Giovanna Tanda

Valeria Todaro



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*Denis Allard* – BioSP, INRAE – France

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*Patrick Bogaert* – Université catholique de Louvain – Belgium

*Peter Bossew* – German Federal Office for Radiation Protection (BfS) – Germany

*Ilaria Butera* – Politecnico di Torino – Italy

*Guofeng Cao* – University of Colorado Boulder – United States

*Eduardo Cassiraga* – Universitat Politècnica de València – Spain

*Alessandro Comunian* – Università degli Studi di Milano – Italy

*Nadim Coptý* – Bogazici University – Turkey

*Sandra De Iaco* – University of Salento – Italy

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*Jaime Gómez-Hernández* – Universitat Politècnica de València – Spain

*Pierre Goovaerts* – BioMedware, Inc. – United States

*Dario Grana* – University of Wyoming – United States

*Alberto Guadagnini* – Politecnico di Milano – Italy

*Claus Haslauer* – University of Stuttgart – Germany

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*George P. Karatzas* – Technical University of Crete – Greece

# Scientific Committee

*Sara Kasmaeeyazdi* – University of Bologna – Italy

*Liangping Li* – South Dakota School of Mines – United States

*Gregoire Mariethoz* – University of Lausanne – Switzerland

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*Alessandra Menafoglio* – Politecnico di Milano – Italy

*Paula Moraga* – King Abdullah University of Science and Technology – Saudi Arabia

*Julian Ortiz* – Queen’s University – Canada

*Monica Palma* – University of Salento – Italy

*Edzer Pebesma* – University of Muenster – Germany

*Maria João Pereira* – CERENA, Instituto Superior Técnico, Universidade de Lisboa – Portugal

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*Xavier Sanchez-Vila* – Universitat Politècnica de Catalunya – Spain

*Amilcar Soares* – Instituto Superior Técnico, Universidade de Lisboa – Portugal

*Francesco Tinti* – University of Bologna – Italy

*Emmanouil Varouchakis* – Technical University of Crete – Greece

*Hans Wackernagel* – Mines Paris Tech, Université PSL – France

# Social Program

## Tuesday, June 21, 2022 from 18:30

Icebreaker – [Main building](#) of the University of Parma, in downtown Parma (Strada Università 12, Parma)

## Wednesday, June 22, 2022 at 19:00

5K Race at Ducale Park. Meeting point at the [Ducale Palace](#)

## Thursday, June 23, 2022 at 12:45

geoENV2022 Group Photo outside the main conference room

## Thursday, June 23, 2022 at 19:30

Gala Dinner at the [Labyrinth](#). Meeting at [Pilotta bus stop](#) at 19:00

# Keynote Speakers

**Wednesday, June 22, 2022 9:20 – 10:10**

**Carolina Guardiola Albert**, Geological Survey of Spain (IGME-CSIC)

*Exploitation of InSAR ground movement measurements through geostatistics*

**Thursday, June 23, 2022 9:00 – 9:50**

**Leonardo Azevedo**, CERENA, Instituto Superior Técnico, Universidade de Lisboa – Portugal

*Modelling the ocean with acoustic waves: a geostatistical inversion approach*

**Friday, June 24, 2022 9:00 – 9:50**

**Laura Poggio**, ISRIC – World Soil Information, the Netherlands

*Geostatistics, machine learning and spatial patterns*

# Scientific Program Summary

## Wednesday, June 22, 2022

8:00 – 9:00	Registration
9:00 – 9:20	Opening Ceremony
9:20 – 10:00	Keynote lecture - Carolina Guardiola Albert
10:00 – 10:40	Plenary Session
10:40 – 11:10	Coffee Break
11:10 – 12:30	Parallel Sessions (A1 and B1)
12:30 – 14:00	Lunch
14:00 – 15:40	Parallel Sessions (A2 and B2)
15:40 – 16:10	Coffee Break
16:10 – 17:30	Parallel Sessions (A3 and B3)

## Thursday, June 23, 2022

8:00 – 9:00	Registration
9:00 – 9:40	Keynote lecture - Leonardo Azevedo
9:40 – 10:40	Plenary Session
10:40 – 11:10	Coffee Break
11:10 – 12:30	Parallel Sessions (A1 and B1)
12:30 – 14:00	Lunch <sup>1</sup>
14:00 – 15:20	Parallel Sessions (A2 and B2)
15:20 – 17:00	Poster Session and Coffee Break

## Friday, June 24, 2022

8:00 – 9:00	Registration
9:00 – 9:40	Keynote lecture - Laura Poggio
9:40 – 10:40	Plenary Session
10:40 – 11:10	Coffee Break
11:10 – 12:10	Plenary Session
12:10 – 12:30	Closing Ceremony
12:30	Lunch Box

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<sup>1</sup> 13:20 geoENVia General Assembly

# Wednesday

June 22, 2022

Plenary Session  
Main Conference Room

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9:00 – 9:20      **geoENV2022 Opening Ceremony**

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9:20 – 10:00      **Keynote Speaker in Plenary Session**

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EXPLOITATION OF INSAR GROUND MOVEMENT  
MEASUREMENTS THROUGH GEOSTATISTICS

**Carolina Guardiola Albert**

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10:00 – 10:40      **Oral Plenary Session**

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*Chairman: Paula Moraga*

*10:00 - 10:20  
ENVIRONMENTAL  
POLLUTION AND  
RISK ASSESSMENT*

GEOSPATIAL MODEL OF COMPOSITION OF WATER  
SERVICE LINES IN FLINT, MI: VALIDATION USING  
EXCAVATION DATA AND A NEW COMPOSITIONAL  
GEOSTATISTICAL APPROACH

**Pierre Goovaerts**

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*10:20 - 10:40  
HEALTH,  
EPIDEMIOLOGY,  
ECOTOXICOLOGY*

FUNCTIONAL DATA ANALYSES TO MODEL COVID-19  
WAVES

**Maria João Pereira, Leonardo Azevedo, Manuel Ribeiro,  
Amilcar Soares**

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10:40 – 11:10      **Coffee Break**

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# Wednesday

June 22, 2022

Parallel Session A  
Main Conference Room

11:10 – 12:30	Oral Session A1	Chairman: Peter Bossew
11:10 - 11:30 GEOSTATISTICAL THEORY AND NEW METHODOLOGIES	A COMPARISON BETWEEN BAYESIAN AND ORDINARY KRIGING BASED ON VALIDATION CRITERIA: APPLICATION TO RADIOLOGICAL CHARACTERISATION <b><u>Martin Wieskotten</u>, Marielle Crozet, Bertrand Iooss, Céline Lacaux, Amandine Marrel</b>	
11:30 - 11:50 GEOSTATISTICAL THEORY AND NEW METHODOLOGIES	BIVARIATE DEEPKRIGING FOR LARGE-SCALE SPATIAL INTERPOLATION OF WIND FIELD <b><u>Pratik Nag</u>, Ying Sun, Brian Reich</b>	
11:50 - 12:10 GEOSTATISTICAL THEORY AND NEW METHODOLOGIES	USING SEQUENTIAL INDICATOR SIMULATION TO MODEL NON-STATIONARY GEOLOGICAL DOMAINS COMBINING WITH A MACHINE LEARNING ALGORITHM <b><u>Almas Amirzhan</u>, Nasser Madani</b>	
12:10 - 12:30 GEOSTATISTICAL THEORY AND NEW METHODOLOGIES	USING GEOSTATISTICAL APPROACHES TO ESTIMATE THE RGB VALUES UNDER A CLOUD COVERED AREA WITHIN THE SENTINEL-2 IMAGES <b><u>Ashkan Tayebi Gholamzadeh</u>, Roberto Bruno, Sara Kasmaeeyazdi, Francesco Tinti</b>	
12:30 – 14:00	Lunch	

# Wednesday

June 22, 2022

Parallel Session A  
Main Conference Room

14:00 – 15:40	Oral Session A2	Chairman: Amilcar Soares
14:00 - 14:20 INVERSE MODELING	GEOSTATISTICAL INVERSION FOR ROCK PHYSICS PROPERTIES IN THE CRITICAL ZONE <b><u>Dario Grana</u>, Andrew Parsekian</b>	
14:20 - 14:40 INVERSE MODELING	MACHINE LEARNING-BASED INVERSE MODELING FOR THE IDENTIFICATION OF HYDRAULIC CONDUCTIVITY <b><u>Vanessa A. Godoy</u>, Gian F. Napa-Garcia, J. Jaime Gómez- Hernández</b>	
14:40 - 15:00 INVERSE MODELING	GEOSTATISTICAL ELECTRICAL RESISTIVITY TOMOGRAPHY INVERSION FOR GROUNDWATER CHARACTERIZATION <b><u>João Lino Pereira</u>, Mafalda Oliveira, Rui Guinote, Emmanouil A. Varouchakis, J. Jaime Gómez-Hernández, Leonardo Azevedo</b>	
15:00 - 15:20 INVERSE MODELING	MODELLING THE COMPLEXITY BENEATH OUR FEET: A JOINT INVERSION FDEM AND ERT TECHNIQUE <b><u>João Narciso</u>, Ellen Van De Vijver, Leonardo Azevedo</b>	
15:20 - 15:40 INVERSE MODELING	SEISMIC OCEANOGRAPHY IMAGING AND INVERSION OF THE MADEIRA ABYSSAL PLAIN <b><u>Ana Filipa Duarte</u>, Leonardo Azevedo, Luis Matias, Álvaro Peliz, Renato Mendes</b>	
15:40 – 16:10	Coffee Break	

# Wednesday

June 22, 2022

Parallel Session A  
Main Conference Room

16:10 – 17:30	Oral Session A3	Chairman: Claus Haslauer
16:10 - 16:30 INVERSE MODELING	PERMEABILITY PREDICTION WITH GEOSTATISTICAL SEISMIC INVERSION CONSTRAINED BY ROCK PHYSICS <b><u>Roberto Miele</u>, Dario Grana, João Felipe Costa, Paula Bürkle, Luiz Eduardo Varella, Bernardo Viola Barreto, Leonardo Azevedo</b>	
16:30 - 16:50 INVERSE MODELING	IDENTIFICATION OF CONTAMINANT SOURCES AND PLUMES AFFECTED BY BIODEGRADATION AND SORPTION PROCESSES BY ENSEMBLE KALMAN FILTERS <b><u>Alicia Sanz-Prat</u>, J. Jaime Gómez-Hernández</b>	
16:50 - 17:10 OTHER	MODELING DENSITY DATA ACROSS THE IBERIAN MASSIF (PORTUGAL): RELIABILITY ASSESSMENT FOR ENVIRONMENTAL APPLICATIONS <b><u>Filipa Domingos</u>, Gustavo Luís, Sérgio Sêco, Alcides Pereira</b>	
17:10 - 17:30 OTHER	CONDITIONED SIMULATION FOR GEOSTATISTICAL TREATMENT OF SEISMIC THREAT IN ANTIOQUIA STATE, NORTHWESTERN COLOMBIA <b>Luis Hernán Sánchez Arredondo, <u>Lilian Posada García</u>, Adiel Martínez</b>	

# Wednesday

June 22, 2022

Parallel Session B

Aula Centrale Room

11:10 – 12:30	Oral Session B1	Chairman: Pierre Goovaerts
11:10 - 11:30 HEALTH, EPIDEMIOLOGY, ECOTOXICOLOGY	A STOCHASTIC MODEL OF AN ALERT SYSTEM FOR DETECTING LOCAL ANOMALOUS INCIDENCE VALUES OF COVID-19 <b><u>Ana Filipa Duarte</u>, Leonardo Azevedo, Amilcar Soares</b>	
11:30 - 11:50 HEALTH, EPIDEMIOLOGY, ECOTOXICOLOGY	UNPACKING OCCUPATIONAL HEALTH DATA IN THE TERTIARY SECTOR. FROM SPATIAL CLUSTERING TO BAYESIAN DECISION MAKING <b><u>María Pazo</u>, Carlos Boente, Teresa Albuquerque, Natália Roque, Saki Gerassis, Javier Taboada</b>	
11:50 - 12:10 HEALTH, EPIDEMIOLOGY, ECOTOXICOLOGY	SPATIO-TEMPORAL POINT PROCESS COMPARTMENT MODELING FOR INFECTIOUS DISEASES <b><u>André Victor Ribeiro Amaral</u>, Jonatan A. González, Paula Moraga</b>	
12:10 - 12:30 HEALTH, EPIDEMIOLOGY, ECOTOXICOLOGY	GEOSPATIAL MODELING OF NATIONAL HEALTH SERVICE DELIVERY SURVEY DATA <b><u>Eun-Hye Enki Yoo</u>, John E. Roberts, Becky Powell, Tia Palmero, Qiang Pu</b>	
12:30 – 14:00	Lunch	

# Wednesday

June 22, 2022

Parallel Session B

Aula Centrale Room

14:00 – 15:40	Oral Session B2	Chairman: Alessandro Comunian
14:00 - 14:20 SURFACE AND SUBSURFACE HYDROLOGY	CRITICAL COMPARISON OF THREE COMPOSITIONAL INDICES TO TRACE GEOCHEMICAL CHANGES DOWNRIVER <b><u>Caterina Gozzi</u>, Antonella Buccianti</b>	
14:20 - 14:40 SURFACE AND SUBSURFACE HYDROLOGY	USING GEOSTATISTICAL METHODS TO HELP OPTIMIZING AN EXISTING GROUNDWATER MONITORING NETWORK <b><u>Nathalie Courtois</u>, Claire Fauchoux</b>	
14:40 - 15:00 SURFACE AND SUBSURFACE HYDROLOGY	A SINGLE SPATIOTEMPORAL FRAMEWORK FOR MONTHLY LOW FLOW ESTIMATION IN AUSTRIA – INCLUDING EMPIRICAL ORTHOGONAL FUNCTIONS, VARIABLE SELECTION, AND FUNCTIONAL CLUSTERING <b><u>Johannes Laimighofer</u>, Michael Melcher, Gregor Laaha</b>	
15:00 - 15:20 SURFACE AND SUBSURFACE HYDROLOGY	ROBUST STATISTICAL PROCESSING OF LONG-TIME DATA SERIES ON SOIL-ATMOSPHERE INTERACTION: PRELIMINARY RESULTS <b>Mirko Anello, Marco Riani, Fabrizio Laurini, <u>Marco Bittelli</u>, Massimiliano Bordoni, Claudia Meisina, Roberto Valentino</b>	
15:20 - 15:40 SOIL APPLICATIONS	A NOVEL METHODOLOGY FOR THE IDENTIFICATION OF ERRORS AND SIGNIFICANT ACCELERATION EVENTS FROM AUTOMATIC INCLINOMETERS TIME SERIES RELATED TO SLOW AND VERY SLOW-MOVING LANDSLIDES <b>Valerio Vivaldi, <u>Massimiliano Bordoni</u>, Laura Pedretti, Mauro Tarabra, Luca Lanteri, Matteo Parnigoni, Alessandra Grossi, Silvia Figini, Nicoletta Negro, Claudia Meisina</b>	

# Wednesday

June 22, 2022

Parallel Session B

Aula Centrale Room

15:40 – 16:10 Coffee Break

16:10 – 17:30 Oral Session B3

Chairman: Francesco Tinti

16:10 - 16:30  
MULTIPLE POINT  
GEOSTATISTICS

APPLYING MPS TO POINT DATA MERGING USING PATTERN-TO-POINT (P2P) CATALOGS

**Fabio Oriani, Gregoire Mariethoz**

16:30 - 16:50  
MULTIPLE POINT  
GEOSTATISTICS

GEOSTATISTICAL SIMULATION FOR OFFSHORE WIND SPEED SPATIO-TEMPORAL GAP-FILLING

**Stylianos Hadjipetrou, Gregoire Mariethoz, Phaedon Kyriakidis**

16:50 - 17:10  
MULTIPLE POINT  
GEOSTATISTICS

HANDLING NON-STATIONARITY IN MULTIPLE-POINT STATISTIC SIMULATION WITH A HIERARCHICAL APPROACH

**Alessandro Comunian, Edoardo Consonni, Chiara Zuffetti, Riccardo Bersezio, Mauro Giudici**

17:10 - 17:30  
MULTIPLE POINT  
GEOSTATISTICS

PIXEL-BASED MULTIPLE-POINT-STATISTICS PARAMETRIZATION BASED ONLY ON TRAINING IMAGES

**Mathieu Gravey, Gregoire Mariethoz**

# Thursday

June 23, 2022

Plenary Session  
Main Conference Room

9:00 – 9:40

Keynote Speaker in Plenary Session

MODELLING THE OCEAN WITH ACOUSTIC WAVES: A  
GEOSTATISTICAL INVERSION APPROACH

**Leonardo Azevedo**

9:40 – 10:40

Oral Plenary Session

*Chairman: George P. Karatzas*

9:40 - 10:00  
SPATIO-  
TEMPORAL  
PROCESSES

COVARIANCE MODELING FOR SPATIO-TEMPORAL  
COMPLEX-VALUED RANDOM FIELDS

**Sandra De Iaco**

10:00 - 10:20  
GEOSTATISTICAL  
THEORY AND NEW  
METHODOLOGIES

SURROGATE MODELS AS MANAGEMENT TOOLS FOR THE  
REQUENA-UTIEL AND CABRILLAS-MALACARA AQUIFERS

**Janire Uribe-Asarta, Vanessa A. Godoy, J. Jaime Gómez-  
Hernández**

10:20 - 10:40  
OTHER

ANALYSIS OF SURFACE TEXTURE USING SPATIAL  
CONTINUITY INDICES: INTERPRETABILITY, FLEXIBILITY,  
AND ROBUSTNESS

**Sebastiano Trevisani**

10:40 – 11:10

Coffee Break

# Thursday

June 23, 2022

Parallel Session A  
Main Conference Room

<b>11:10 – 12:30</b>	<b>Oral Session A1</b>	<b>Chairman: Monica Palma</b>
<i>11:10 - 11:30</i> GEOSTATISTICAL THEORY AND NEW METHODOLOGIES	A RIEMANNIAN TOOL FOR CLUSTERING OF GEO-SPATIAL MULTIVARIATE DATA <b><u>Alvaro Riquelme</u>, Julian Ortiz</b>	
<i>11:30 - 11:50</i> GEOSTATISTICAL THEORY AND NEW METHODOLOGIES	GEOSTATISTICS FOR COMPOSITIONAL DATA: COMPARISON OF LOGARITHMIC TRANSFORMATION METHODS IN AN IRON DEPOSIT <b><u>Milena Nasretdinova</u>, Nasser Madani</b>	
<i>11:50 - 12:10</i> GEOSTATISTICAL THEORY AND NEW METHODOLOGIES	A NEW APPROACH TO SIMULATE CONDITIONAL RANDOM FIELDS WITH CORRELATION TO AN EXTERNAL VARIABLE USING FFTMA AND P-FIELD SIMULATION <b><u>Sebastian Hörning</u>, Andras Bardossy</b>	
<i>12:10 - 12:30</i> GEOSTATISTICAL THEORY AND NEW METHODOLOGIES	IMPLICIT GEOLOGICAL DOMAIN MODELING BY USING GAUSSIAN PROCESSES ALGORITHM <b><u>Talgatbek Bazarbekov</u>, Nasser Madani, Timur Merembayev</b>	
<b>12:30 – 14:00</b>	<b>Lunch</b>	
<b>12:45</b>	<b>geoENV2022 Group Photo</b>	

# Thursday

June 23, 2022

Parallel Session A  
Main Conference Room

<b>14:00 – 15:00</b>	<b>Oral Session A2</b>	<i>Chairman: Teresa Albuquerque</i>
<i>14:00 - 14:20</i> SPATIO- TEMPORAL PROCESSES	VARIABLE KERNEL ESTIMATES OF FIRST-ORDER SUMMARY DESCRIPTOR OF SPATIO-TEMPORAL POINT PROCESSES <b><u>Jonatan A. González, Paula Moraga</u></b>	
<i>14:20 - 14:40</i> SPATIO- TEMPORAL PROCESSES	GEOSTATISTICAL ANALYSIS OF EXTREME PRECIPITATION RECORDS OVER NORTH-WEST ITALY <b><u>Paola Mazzoglio, Ilaria Butera, Pierluigi Claps</u></b>	
<i>14:40 - 15:00</i> SPATIO- TEMPORAL PROCESSES	A MARKED POINT-PROCESS SPATIO TEMPORAL MODEL TO UNDERSTAND FOREST FIRES IN THE MEDITERRANEAN BASIN <b><u>Oscar Rodriguez de Rivera Ortega, Juncal Espinosa Prieto, Javier Madrigal, Marta Blangiardo, Antonio López-Quílez</u></b>	
<b>15:20 – 17:00</b>	<b>Poster Session and Coffee Break</b>	

# Thursday

June 23, 2022

Parallel Session B

Aula Centrale Room

<b>11:10 – 12:30</b>	<b>Oral Session B1</b>	<i>Chairman: Maria João Pereira</i>
<i>11:10 - 11:30</i> REMOTE SENSING	A GEOSTATISTICAL POINT OF VIEW ON HETEROSUPPORT AND HETEROTOPIC CO-REGIONALIZATION OF REMOTE SENSED INFORMATION <b><u>Roberto Bruno</u>, Sara Kasmaeeyazdi, Francesco Tinti</b>	
<i>11:30 - 11:50</i> REMOTE SENSING	MAPPING OF CRITICAL RAW MATERIALS IN BAUXITE MINING RESIDUES USING GEOSTATISTICS AND REMOTE SENSING <b><u>Sara Kasmaeeyazdi</u>, Adriana Guatame-Garcia, Francesco Tinti, Mike Buxton, Emanuele Mandanici, Joachim Schick, Francoise Bodenan, Dimitris Sparis, Efthymios Balomenos, Roberto Bruno</b>	
<i>11:50 - 12:10</i> REMOTE SENSING	DETECTION OF GROUND DEFORMATION EVENTS: A METHODOLOGY FOR THE STATISTICAL ANALYSIS OF INSAR TIME SERIES <b><u>Laura Pedretti</u>, Massimiliano Bordonni, Valerio Vivaldi, Silvia Figini, Matteo Parnigoni, Alessandra Grossi, Luca Lanteri, Mauro Tarabra, Nicoletta Negro, Claudia Meisina</b>	
<i>12:10 - 12:30</i> REMOTE SENSING	REMOTE SENSING CHANGE DETECTION FOR THE APPEARANCE AND DISAPPEARANCE OF OASES FARMLAND IN CENTER ASIA <b><u>Hoshino Buho</u></b>	
<b>12:30 – 14:00</b>	<b>Lunch</b>	
<b>12:45</b>	<b>geoENV2022 Group Photo</b>	

# Thursday

June 23, 2022

Parallel Session B

Aula Centrale Room

14:00 – 15:20	Oral Session B2	Chairman: Dario Grana
14:00 - 14:20 ENVIRONMENTAL POLLUTION AND RISK ASSESSMENT	THE GEOGRAPHICAL PATTERN OF LOCAL STATISTICAL DISPERSION OF ENVIRONMENTAL RADON IN EUROPE <b><u>Peter Bossew</u></b>	
14:20 - 14:40 ENVIRONMENTAL POLLUTION AND RISK ASSESSMENT	GEOSTATISTICAL MAPPINGS OF INDOOR RADON CONCENTRATIONS DATA IN FRANCE <b><u>Jean-Michel Metivier</u>, Claire Greau, Nahla Mansouri</b>	
14:40 - 15:00 ENVIRONMENTAL POLLUTION AND RISK ASSESSMENT	SPATIOTEMPORAL PREDICTIONS OF MULTIPLE AIR POLLUTION DATA: A CASE STUDY <b>Claudia Cappello, Sandra De Iaco, <u>Monica Palma</u></b>	
15:00 - 15:20 OTHER	ENVIRONMENTAL GEOSTATISTICS OF HEAVY METALS IN FINE ACTIVE SEDIMENTS OF OESTE ANTIOQUEÑO SUBREGION ANTIOQUIA-COLOMBIA <b><u>Luis Hernán Sánchez Arredondo</u>, Jheyson Andrés Bedoya Londoño, Sergio Alejandro Garavito Higuera</b>	
15:20 – 17:00	Poster Session and Coffee Break	

# Thursday

June 23, 2022

Poster Session

Corridor in front of Aula Centrale Room

15:20 – 17:00

Poster Session

ECOLOGY,  
NATURAL  
RESOURCES

A GEOSTATISTICAL APPROACH FOR MERCURY SPATIAL PATTERNS ASSESSMENT IN SEDIMENTS IN AN OLD MINING REGION -THE CAVEIRA MINE CASE STUDY, PORTUGAL

**Natália Mota, Rita Fonseca, Joana Araújo, Margarida Antunes, Teresa Valente, Ana Barroso, Alexandre Araújo, Teresa Albuquerque**

ENVIRONMENTAL  
POLLUTION AND  
RISK ASSESSMENT

STREAM SEDIMENTS POLLUTION: A COMPOSITIONAL BASELINE ASSESSMENT AT THE CAVEIRA MINE, PORTUGAL

**Joana Araújo, Rita Fonseca, Natália Mota, Alexandre Araújo, Margarida Antunes, Teresa Valente, Ana Barroso, Teresa Albuquerque**

ENVIRONMENTAL  
POLLUTION AND  
RISK ASSESSMENT

INTERPOLATED SURFACES AS MAPPING UNITS FOR BINARY CLASSIFICATION OF RADON PRONE AREAS: A CASE-STUDY FROM CENTRAL PORTUGAL

**Gustavo Luís, Alcides Pereira**

ENVIRONMENTAL  
POLLUTION AND  
RISK ASSESSMENT

A SPATIO-TEMPORAL MULTILEVEL MULTIVARIATE MODEL TO EVALUATE THE DETERMINANTS OF AIR POLLUTION IN APULIA REGION

**Sabrina Maggio, Claudia Cappello, Sandra De Iaco**

FORESTRY,  
AGRICULTURE

OPERATIONAL SPATIALISATION OF HOURLY AND DAILY WEATHER DATA (AIR TEMPERATURE AND RELATIVE HUMIDITY) FOR AGRICULTURAL DECISION SUPPORT SYSTEMS

**Damien Rosillon, Alban Jago, Jean Pierre Huart, Viviane Planchon, Michel Journée, Patrick Bogaert**

# Thursday

June 23, 2022

Poster Session

Corridor in front of Aula Centrale Room

GEOSTATISTICAL  
THEORY AND NEW  
METHODOLOGIES

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APPLICATION OF GEOSTATISTICS AND SELF-ORGANIZING  
MAPS FOR ESTIMATION OF GROUNDWATER LEVEL SPATIAL  
DISTRIBUTION IN COMPLEX HYDROGEOLOGICAL SYSTEMS

**Emmanouil Varouchakis, George P. Karatzas, Ioannis Trichakis**

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GEOSTATISTICAL  
THEORY AND NEW  
METHODOLOGIES

ANALYSIS OF TWO PRECIPITATION DATA GAP-FILLING  
METHODS IN A STUDY AREA OF NORTHERN ITALY

**Camilla Fagandini, Valeria Todaro, Maria Giovanna Tanda,  
Andrea Zanini**

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HEALTH,  
EPIDEMIOLOGY,  
ECOTOXICOLOGY

SPATIALEPISIM: AN R SHINY APP FOR TRACKING INFECTIOUS  
DISEASES IN LOW- AND MIDDLE-INCOME COUNTRIES (LMIC)

**Ashok Krishnamurthy, Crystal Wai, Gursimran Dhaliwal, Jake  
Doody**

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HEALTH,  
EPIDEMIOLOGY,  
ECOTOXICOLOGY

GEOSTATISTICAL COVID-19 RISK AND UNCERTAINTY IN A  
SINGLE MAP WITH R OPEN-SOURCE CODE

**Manuel Ribeiro, Leonardo Azevedo, Amílcar Soares, Maria João  
Pereira**

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INVERSE  
MODELING

SOLVING GEOPHYSICAL RANDOM EFFECT MODELS WITH  
INTRACTABLE LIKELIHOODS: LINEARIZED GAUSSIAN  
APPROXIMATIONS VERSUS THE CORRELATED PSEUDO-  
MARGINAL METHOD

**Lea Friedli, Niklas Linde, David Ginsbourger**

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INVERSE  
MODELING

ON A CONSTRUCTIVE SPECTRAL METHOD FOR  
CONDITIONING PLURIGAUSSIAN SIMULATIONS TO  
BOREHOLES OBSERVATIONS AND INDIRECT DATA.  
APPLICATION TO AQUIFER MODELS

**Dany Lauzon, Denis Marcotte**

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# Thursday

June 23, 2022

Poster Session

Corridor in front of Aula Centrale Room

INVERSE  
MODELING

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EFFICIENT INVERSION WITH COMPLEX GEOSTATISTICAL PRIORS USING NORMALIZING FLOWS AND VARIATIONAL INFERENCE

**Shiran Levy, Eric Laloy, Niklas Linde**

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INVERSE  
MODELING

GROUNDWATER CONTAMINANT SOURCE CHARACTERIZATION THROUGH ARTIFICIAL NEURAL NETWORKS

**Laura Molino, Daniele Secci, Andrea Zanini**

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INVERSE  
MODELING

ASSESSMENT OF HYDRAULIC CONDUCTIVITY FIELD USING LABORATORY SANDBOX TRACER TEST DATA AND AN ENSEMBLE KALMAN FILTER METHOD

**Valeria Todaro, Andrea Zanini, Marco D'Oria, J. Jaime Gómez-Hernández, Maria Giovanna Tanda**

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REMOTE SENSING

DERIVING HIGH SPATIAL RESOLUTION DAILY VEGETATION INDEX IMAGES FROM SENTINEL AND MODIS DATA: A GEOSTATISTICAL APPROACH

**Alzira Ramos, Leonardo Azevedo, Cristina Branquinho, Gregory Duveiller, Maria João Pereira**

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SPATIO-  
TEMPORAL  
PROCESSES

A NONPARAMETRIC SPATIO-TEMPORAL APPROACH TO EVALUATE UNCERTAINTY IN GEOSTATISTICS

**Claudia Cappello, Sandra De Iaco, Sabrina Maggio, Monica Palma**

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SPATIO-  
TEMPORAL  
PROCESSES

AN ENSEMBLE-BASED APPROACH FOR THE ANALYSIS OF SPATIALLY MISALIGNED DATA

**Ruiman Zhong, Paula Moraga**

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# Thursday

*June 23, 2022*

*Poster Session*

*Corridor in front of Aula Centrale Room*

OTHER

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IMPORTANCE OF MULTI-PARAMETER APPROACHES IN THE  
DEVELOPMENT OF MACHINE LEARNING ALGORITHMS FOR  
LANDSLIDE DISPLACEMENT FORECASTING

**Marco Conciatori, Alessandro Valletta, Andrea Segalini**

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# Friday

June 24, 2022

*Plenary Session*  
*Main Conference Room*

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## 9:00 – 9:40 Keynote Speaker in Plenary Session

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GEOSTATISTICS, MACHINE LEARNING AND SPATIAL PATTERNS

**Laura Poggio**

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## 9:40 – 10:40 Oral Plenary Session Chairman: Jaime Gómez-Hernández

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9:40 - 10:00

GEOSTATISTICAL  
THEORY AND NEW  
METHODOLOGIES

COMBINED ANALYSIS OF SPATIALLY MISALIGNED DATA USING GAUSSIAN FIELDS AND THE STOCHASTIC PARTIAL DIFFERENTIAL EQUATION APPROACH

**Paula Moraga**

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10:00 - 10:20

ECOLOGY,  
NATURAL  
RESOURCES

BAYESIAN U-NET FOR ORE TYPE UNCERTAINTY MODELING IN COMPLEX GEOLOGICAL ENVIRONMENTS

**Helga Jordão, Amílcar Soares**

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10:20 - 10:40

OTHER

COUPLED SURFACE-SUBSURFACE HYDROLOGICAL MODEL FOR THE ESTIMATION OF NET RECHARGE OF THE KONYA CLOSED BASIN, TURKEY

**Onur Cem Yologlu, Nadim Copty, Izel Uygur, Mehmet Can Tunca, Elif Bal, Buse Yetisti, Irem Daloglu, Ali Kerem Saysel**

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## 10:40 – 11:10 Coffee Break

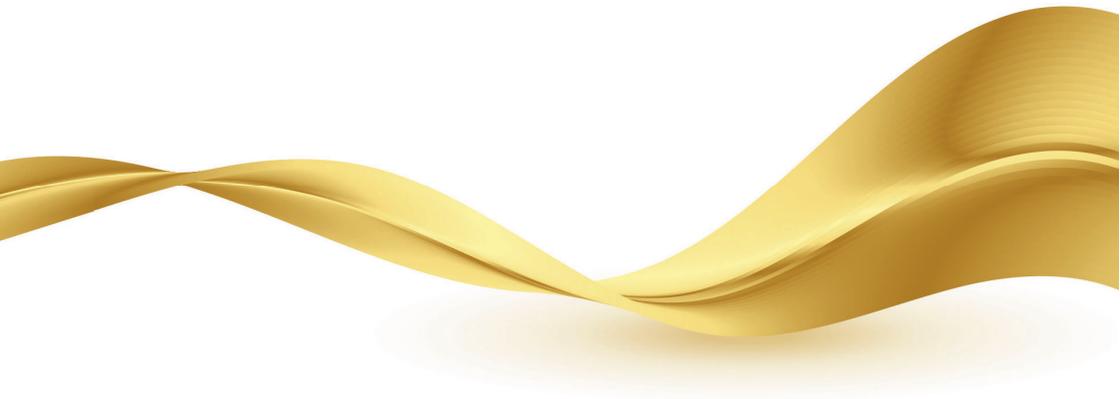
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# Friday

June 24, 2022

Plenary Session  
Main Conference Room

<b>11:10 – 12:10</b>	<b>Oral Plenary Session</b>	<b>Chairman: Sandra De Iaco</b>
<i>11:10 - 11:30 GEOSTATISTICAL THEORY AND NEW METHODOLOGIES</i>	DOES MORE INFORMATION INCLUDED IN SPATIALLY DISTRIBUTED FIELDS LEAD TO AN IMPROVED MATCH TO OBSERVED DEPENDENT VARIABLES? <b>Bo Xiao, <u>Claus Haslauer</u>, Geoff Bohling, András Bárdossy</b>	
<i>11:30 - 11:50 GEOSTATISTICAL THEORY AND NEW METHODOLOGIES</i>	AN OBJECT-ORIENTED APPROACH TO THE ANALYSIS OF SPATIAL FUNCTIONAL DATA OVER STREAM-NETWORK DOMAINS <b>Chiara Barbi, <u>Alessandra Menafoglio</u>, Piercesare Secchi</b>	
<i>11:50 - 12:10 GEOSTATISTICAL THEORY AND NEW METHODOLOGIES</i>	TWO APPROACHES TO SCENARIO MODELLING USING THE EMBEDDED ESTIMATOR METHOD <b><u>Colin Daly</u></b>	
<b>12:10 – 12:30</b>	<b>geoENV2022 Closing Ceremony</b>	
<b>12:30</b>	<b>Lunch Box</b>	



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