



# Joint Meeting METMA VII and GRASPA14

University of Torino, 10-12 September 2014



## September 10, 2014

| Chair                    | Time          | Session  | Title   |
|--------------------------|---------------|--|---|
|                          | 08:30 - 09:15 | Registration   |   |
|                          | 09:15 - 09:45 | OPENING  |   |
| <b>Alessandro FASSO'</b> | 09:45 - 10:45 | Keynote speaker 1 -- Alfred STEIN                              | Modeling spatial uncertainty with random sets for edge detection from satellite images  |
|                          | 10:45 - 11:15 | coffe break  |   |
| <b>Michela CAMELETTI</b> | 11:15 - 11:45 | Poster Snapshot Session 1                                      |   |
| <b>Lola UGARTE</b>       | 11:45 - 12:25 | Contributed Session 1  | Functional clustering   |
|                          |               | Gaetan, Girardi, Pastres<br>Bongiorno, Goia                    | The role of spatial dependence on the functional clustering based on the smoothing splines regression<br>Clustering for functional data   |
|                          | 12:25 - 12:50 | Invited speaker 1 -- Rosa CRUJEIRAS                            | Directional-linear nonparametric regression for wildfire analysis   |
|                          | 12:50 - 14:20 | lunch  |   |
| <b>Francisco ALONSO</b>  | 14:20 - 14:55 | Invited speaker 2 -- Daniela COCCHI                            | Individual design based prediction: the assistance from spatial relationships   |
|                          | 14:55 - 15:35 | Contributed Session 2  | Spatial sampling  |
|                          |               | Bruno, Cocchi, Vagheggini<br>Bohorquez, Giraldo, Mateu         | Individual spatial prediction under the design-based framework<br>Dynamic Spatial Sampling  |
| <b>Michela CAMELETTI</b> | 15:35 - 16:10 | Poster Snapshot Session 2                                      |   |
|                          | 16:10 - 16:40 | coffe break  |   |
| <b>Raquel MENEZES</b>    | 16:40 - 17:20 | Contributed Session 3  | Spatial methods   |
|                          |               | Alonso, Bueso, Angulo<br>Romero Béjar, Angulo Ibáñez           | Dependence assessment based on generalized relative complexity measures: application to sampling network design<br>On excursion probabilities for a class of non-stationary random fields |
| <b>Michela CAMELETTI</b> | 17:20 - 17:55 | Poster Snapshot Session 3                                      |   |
|                          | 18:00 - 20:30 | Social Activity: guided walking tour around Torino City Centre |   |

## September 11, 2014

| Chair                        | Time                 | Session  | Title  |
|------------------------------|----------------------|--|--|
| <b>Jorge MATEU</b>           | 09:00 - 10:00        | <b>Keynote speaker 2 -- Rick SCHOENBERG</b>  | <b>Review of model evaluation techniques for space-time point processes</b>  |
|                              | 10:00 - 10:35        | <b>Invited speaker 3 -- Lola RUIZ MEDINA</b>   | <b>Fractional pseudodifferential modeling through spatiotemporal duality applied to Geosciences</b>  |
|                              | <b>10:35 - 11:05</b> | <b>coffe break</b>   |  |
| <b>Josè Miguel ANGULO</b>    | 11:05 - 12:05        | <b>Contributed Session 4</b>   | <b>Analysis of meteorological data</b>   |
|                              |                      | Ambach, Schmid<br>Oesting, Bel, Lantuéjoul<br>Militino, Ugarte, Goicoa, Genton   | Evaluating Different Periodic Seasonal Time Series Model for Efficient Short-Term Wind Speed Prediction<br>Sampling from Max-Stable Processes Conditional on a Homogeneous Functional via an MCMC Algorithm<br>Alternative Spatio-temporal models for daily rainfall prediction in Navarre |
|                              | 12:05 - 12:40        | <b>Invited speaker 4 -- Giada ADELFIGIO</b>  | <b>Space-time Point Processes semi-parametric estimation with predictive measure information</b>   |
|                              | <b>12:40 - 14:10</b> | <b>lunch</b>   |  |
| <b>Giovanna JONA LASINIO</b> | 14:10 - 14:45        | <b>Invited speaker 5 -- Luigi IPPOLITI</b>   | <b>Regression Analysis in a Data Rich Environment</b>  |
|                              | 14:45 - 15:45        | <b>Contributed Session 5</b>   | <b>Bayesian models</b>   |
|                              |                      | Solana-Gutierrez, Thomas<br>Bruno, Greco, Ventrucci<br>Del Sarto, Ranalli, Bakar, Cappelletti, Moroni, Crocchianti, Castellini | A Bayesian state space model for estimating wild boar dynamic population in a hunting estate<br>Regression on compositional covariates: assessing substrate suitability for vegetation<br>Bayesian spatio-temporal modeling of urban air pollution dynamics                                |
|                              | <b>15:45 - 16:15</b> | <b>coffe break</b>   |  |
| <b>Michela CAMELETTI</b>     | 16:15 - 17:15        | <b>Poster Session and Ballot</b>   |  |
| <b>Marcello CHIODI</b>       | 17:15 - 17:55        | <b>Contributed Session 6</b>   | <b>Space-time applications I</b>   |
|                              |                      | Altieri, Scott, Cocchi, Illian<br>Bobbia, Misiti, Misiti, Poggi, Portier   | A Bayesian changepoint analysis of spatio-temporal point processes, with application to radioactive particle data<br>Spatial outlier detection in the air quality monitoring network of Normandy (France)  |
|                              | 18:00 - 19:00        | <b>GRASPA general meeting</b>  |  |
|                              | <b>20:30 - ...</b>   | <b>Social dinner</b>   |  |

## September 12, 2014

| Chair                              | Time                 | Session  | Title  |
|------------------------------------|----------------------|--|--|
| <b>Daniela COCCHI</b>              | 09:30 - 10:30        | <b>Keynote speaker 3 -- Abdel EL SHARAAWI</b>  | <b>Space Time Analysis of Environmental Data: Some Canadian Examples</b>   |
|                                    | 10:30 - 11:05        | <b>Invited speaker 6 -- Tomás GOICOA</b>   | <b>Age-space-time models for mapping cancer mortality rates</b>  |
|                                    | <b>11:05 - 11:35</b> | <b>coffe break</b>   |  |
| <b>Wenceslao GONZALEZ-MANTEIGA</b> | 11:35 - 12:55        | <b>Contributed Session 7</b>   | <b>Space-time applications II</b>  |
|                                    |                      | Menezes, Piairo, Garcia-Soidán, Sousa<br>Chernyavskiy, Hudac, Molfese, Marx<br>Esquivel, Angulo<br>Gneuß, Schmid, Schwarze | Spatial-Temporal modelization of the NO2 concentration data in mainland Portugal<br>Using the Spatio-Temporal Variogram for the Classification of Electroencephalographic (EEG) Assessment<br>Non-extensive analysis of the seismic activity involving the 2011 volcanic eruption in El Hierro<br>Spatio-temporal statistical analysis of the carbon footprint of the terrestrial vegetation |
|                                    | <b>12:55 - 14:25</b> | <b>lunch</b>   |  |
| <b>Alessio POLLICE</b>             | 14:25 - 15:00        | <b>Invited speaker 7 -- Annibale BIGGERI</b>   | <b>Comparison of Loss Functions in Spatial Epidemiologic Surveillance</b>  |
|                                    | 15:00 - 15:40        | <b>Contributed Session 8</b>   | <b>Environmental assessment</b>  |
|                                    |                      | Margalho, Menezes, Sousa<br>Lucarelli, Mazziotta, Talucci, Ungaro  | Spatio-temporal modelling in the presence of few time points<br>Composite Index for Measuring Italian Regions' Environmental Quality Over Time   |
|                                    | 15:40 - 16:00        | <b>CLOSING and poster AWARDS</b>   |  |
|                                    | <b>16:00 - 16:30</b> | <b>GOODBYE coffee break</b>  |  |

## Poster Snapshot Sessions

| Number                           | Authors   | Title  |
|----------------------------------|---|--|
| <b>Poster Snapshot Session 1</b> |   |  |
| 1                                | García-Soidán and Menezes   | Construction of probability maps under local stationarity  |
| 2                                | Fernández-Casal and García-Soidán   | Bandwidth selection for local linear estimation of the spatial trend   |
| 3                                | Fernández-Casal, Francisco-Fernández, Quintela-del-Río and Castillo-Páez  | Nonparametric geostatistical risk mapping  |
| 4                                | Mutambanengwe, Faes and Aerts   | A restricted composite likelihood approach to modelling Gaussian geostatistical data   |
| 5                                | Berchiolla, Blangiardo, Cameletti, Finazzi, Franco-Villoria and Ignaccolo | Spatial model for cardio-respiratory diseases hospital admission in Torino province  |
| 6                                | Smith, Schwab and Marx  | Spatial Simulation and Estimation of Generalized Linear Mixed Models with Non-Normal Data  |
| 7                                | Ippoliti, Di Zio, Fontanella and Martin                                   | Optimal Network Designs for Spatial Prediction   |
| 8                                | Sarra and Nissi   | Cost-effectiveness analysis of radon control actions   |
| 9                                | Juan, Mateu and Díaz-Avalos   | Non-Gaussian spatial modelling of Chagas disease in Argentina  |
| 10                               | Aubin and Bertrand-Krajewski  | Analysis of Continuous Time Series in Urban Hydrology: Filling Gaps and Data Reconstitution  |
| <b>Poster Snapshot Session 2</b> |   |  |
| 11                               | Arcuti, Pollice, Ribecco and Tursi  | Bayesian delta normal spatio-temporal model for zero inflated biological data  |
| 12                               | Jona Lasinio, Pollice, Arima, Rosati, Castaldelli, Fano and Basset        | Biodiversity partitioning for transitional water ecosystems  |
| 13                               | Mejía-Domínguez, Díaz-Ávalos and Ochoa-Ochoa                              | Spatial autocorrelation in species distribution models: autologistic model with covariates vs. BioMod  |
| 14                               | Di Battista, Fortuna, Giordani and Valentini                              | Bayesian spatial SEM for lichen biodiversity   |
| 15                               | Romano, Mateu and Vlad  | Measuring contour functions deformation by Principal Differential Analysis: a distance based approach for the analysis of Glioblastoma Multiform |
| 16                               | Sun, Hering and Nychka  | A Semi-Parametric Method for Robust Multivariate Error Detection in Skewed Functional Data with Application to Historical Radiosonde Winds       |
| 17                               | Ramirez   | Spatial econometric model of the Ecological Footprint  |
| 18                               | Finazzi and Fassò   | Earthquake monitoring using volunteer smartphone-based sensor networks   |
| 19                               | Zeleny and Marx   | Modeling Multivariate Time Series with Uneven Spacing on Multiple Time Scales to Estimate Large Scale Time Trend                                 |
| 20                               | Álvarez and Martín  | One-tailed asymptotic inferences for a proportion  |
| 21                               | González, Hahn and Mateu  | Analysis of spatio-temporal point patterns with replication  |
| <b>Poster Snapshot Session 3</b> |   |  |
| 22                               | Carot and Mateu   | Spatio-temporal classification in point patterns under the presence of clutter   |
| 23                               | Omidi, Ayyad, Mateu, Mohammadzadeh and Tamayo                             | Spatial clustering analysis using copulas and point patterns   |
| 24                               | Rodríguez-Cortés, Ghorbani and Mateu                                      | Local indicators of spatio-temporal association: LISTA functions   |
| 25                               | Pereira and Turkman   | A Marked Spatio-Temporal Point Process Model for Forest Fires in Portugal  |
| 26                               | Bruno, Cocchi, Greco and Scardovi   | Addressing the change of support problem with non Gaussian distributions: an application to hourly rainfall prediction                           |
| 27                               | Calculli, Turnone, Finazzi, Pollice and Fassò                             | Jointly modelling air quality and meteorological variables using the D-STEM software   |
| 28                               | Franco-Villoria and Ignaccolo   | Kriging uncertainty for functional data: a comparison study  |
| 29                               | Ribeiro, Amaral-Turkman and Cardoso                                       | Generalized dynamic linear models: An application to Portugal road accident data   |
| 30                               | Juan, Serra, Varga and Saez   | Temperature prediction analysis considering an optimal distribution of stations: clusters or randomly  |
| 31                               | Fassò, Finazzi, Mahaki and Rabiei   | Statistical analysis of water policies, air quality and climate in Isfahan   |
| 32                               | Marcon, Padoan, Naveau and Muliere  | Nonparametric estimation of the dependence among multivariate rainfall maxima  |

### Poster Snapshot Session

Participants in the “Poster Track” will provide a brief overview of their poster in 2 minutes (with 1 slide) to the rest of the participants.

### Poster Session and Ballot

Participants in the “Poster Track” will stand by their poster for discussion and questions.

All participants will be encouraged to vote for their favorite poster to award the “Best Poster Prize”.