PLENARY SESSIONS
J. Stuart Hunter Lecture
Chair: Don Stevens
Douglas W. Nychka, Director of the Institute for Mathematics Applied to Geosciences National, Center for Atmospheric Research “Spatial statistics, computer models and regional climate change”.

President's Invited Lecture
Chair: Daniela Cocchi
Walter Radermacher, Chief Statistician of the European Union and Director-General of Eurostat: “Sustainable Economics: the contribution of official statistics”.

Invited Lecture GRASPA. Project “Statistical analysis and modelling of impact and risk for environmental phenomena in space and time”
Chair: Gianfranco Lovison
Giovanna Jona Lasinio, University of Roma "La Sapienza", “Spatio temporal data modeling in environmental sciences a review.”

Invited Lecture GRASPA. Project “Methods for collecting and analyzing environmental data”
Chair: Alessandro Fassò
Lorenzo Fattorini, University of Siena, “Sampling strategies for the assessment of ecological diversity”

INVITED SESSIONS Affiliation refers to the first author when authors are more than one
TIES SESSIONS
T1: Statistical issues in assessing forest sustainability (TIES/ISARA)
Organizer: Ronald Mc Roberts Chair: Andrew Finley
- Steen Magnussen, Ronald Mc Roberts, Canadian Forest Service, British Columbia, Canada: ”A bootstrap variance estimator for the observed species richness in quadrat sampling from finite populations”
- Erkki Tomppo, Mari Myllymäki, Antti Penttinen Finnish Forest Research Institute (Metla), Finland: ”Predicting tree level variables using airborne LiDAR data and field observations”

T2: Change-Point Methods for Environmental Data Analysis
Organizer: Venkata K. Jandhyala Chair: Bronwyn Harch
- Ian B. MacNeill, Venkata K. Jandhyala, Elena Naumova, University of Western Ontario, Canada: ”Monitoring using Changepoints”
- Anders Grimvall, Sackmone Sirisack, Linköping Universitet, Sweden: “Integrating smoothing and regression trees for change-point detection in environmental data”
- Venkata K. Jandhyala, Stergios Fotopoulos, Elena Khapalova, Washington State University, USA: “Earthquakes from the Indonesian region: an application of exact computable expressions for the asymptotic distribution of change-point mle in the exponential case”
- Hyune-Ju Kim, Jun Luo, Michael Barrett, Eric Feuer, Syracuse University, USA: ”Comparing piecewise linear trends”
T3: Palaeoclimate reconstruction: statistical challenges
Organizer: John Haslett Chair: Don Stevens
- Andrew Parnell, John Haslett, Michael Salter-Townshend, University College Dublin, Ireland: “Bayesian methods for reconstructing past climate histories”
- Vincent Garreta, Joël Guiot, CEREGE in Aix-en-Provence, France, “Climate reconstructed from pollen data using a dynamic vegetation model”
- Michael Crucifix, Rouger Jonathn, Université catholique de Louvain, Belgie: ”Long-range climate reconstructions with dynamical systems”

T4: Uncertainty in Hydrological forecasting
Organizer: Daniela Cocchi-Ezio Todini Chair: Lelys Guenni
- Ezio Todini, University of Bologna, Italy: “Predictive Uncertainty in Hydrological Forecasting”
- Pierre Aillot, Craig Thompson, Peter Thomson, University of Brest, France: “Space time modeling of precipitation using hidden Markov models”

T5: Ocean Climatologies
Organizer: Alexandra Schmidt Chair: Alexandra Schmidt
- Bruno Sanso, Ricardo Lemos, University of California, USA: ”Spatio-temporal models for oceanic variables”
- Nadia Pinardi, Srdjan Dobiricic, Ralph Milliff, University of Bologna, Italy: “Operational Oceanography: the science based approach to marine management problems”

T6: Fast computation for spatial data
Organizer: Ulla Holst Chair: Ulla Holst
- Nicolas Verzelen, LM-Orsay, INRIA Saclay-Ile de France: “Data-driven neighborhood selection of a Gaussian field”
- Finn Lindgren, Håvard Rue, Johan Lindström, David Bolin, Lund University, Sweden: “Eliminating the practical boundary between Markov and other Gaussian random fields”
- Johan Lindström, Finn Lindgren, Peter Jonsson, David Bolin, Håvard Rue, Lund University, Sweden: “Fast estimation of non-stationary Gaussian Markov Random Fields”
- David Bolin, Finn Lindgren, Lund University, Sweden: ”Non-stationary spatial ARMA models applied to global ozone data”

T7: Risk and extremes in climate research
Organizer: Peter Guttorp Chair: Rick Schoenberg
- Ola Haug, Norwegian Computing Center, Norway: ”Projections of future insurance losses from climate model data”
- George Lindgren, Lund University, Sweden: “Possible climate change effects on marine safety”
- Peter Guttorp, University of Washington, USA: ”Looking for climate change signals in extreme temperatures”
T8: Random effects modeling of environmental data
Organizer: Renjun Ma  Chair: Renjun Ma
- Francesca Dominici, Roger Peng, Michelle Bell, Johns Hopkins Bloomberg School of Public Health, USA: “A Bayesian hierarchical model for estimating health effects of chemical constituents of particulate matter”
- Ronghui Xu, Michael Donohue, Florin Vaida, Rosanna Haut, University of California, USA: “Mixed-effects model selection”
- Guohua Yan, Renjun Ma, University of New Brunswick, Canada: “Analysis of clustered environmental multinomial data with random cluster sizes”

T9: Computational Methods for Large Spatial Data
Organizer: Hao Zhang  Chair: Jorge Mateu
- Abdel El-Shaarawi, National Water Research Institute and McMaster University, Canada: ”Matrix inversion and statistical data analysis”
- Pascal Monestiez, David Nerini, INRA, France: “Functional kriging of ocean profile data”
- Hao Zhang, Purdue University, USA: ”Dealing with large covariance matrices for spatial data”

T10: Forest Fire and Weather
Organizer: W. John Braun  Chair: Victoria Wan
- Valentin Rousson, Juhyun Park, Theo Gasser, University of Lausanne - Switzerland, “On the concept of structural components with an application to weather functional data”
- Alisha Albert-Green, W. John Braun, David L. Martell, Douglas G. Woolford, University of Western Ontario, Canada: “Modelling the Ontario Fire Weather Index”
- Sylvia Esterby, Zuzana Hrdlickova, Steve Taylor, University of British Columbia-Okanagan, Canada, “Characterizing spatial patterns of fire weather using historical data”
- Jonathan Lee, W. John Braun, Bruce Jones, Doug Woolford, Mike Wotton, University of Western Ontario, Canada: “Fire risk assessment in Muskoka, Ontario”

T11: Modeling count environmental data
Organizer: Abdel El-Shaarawi  Chair: Armand Maul
- Renjun Ma, University of New Brunswick Fredericton, Canada: “Poisson nonlinear mixed models for environmental data”
- Rhong Zhu, Abdel El-Shaarawi, Harry Joe, McMaster University, Canada: “Modelling bacterial density count data with various overdispersion and tail heaviness”
- Dianliang Deng, University of Regina, Canada: “The testing of Zero-inflation and overdispersion for the environmental count data”

T12: Chemiometrics
Organizer: Abdel El-Shaarawi  Chair: Abdel El-Shaarawi
- Clifford Spiegelman, Abdel El-Shaarawi, Texas A&M University Center for Statistical Bioinformatics, USA: “Chemiometrics and Environmetrics: Tall Shoulders, Accomplishments, and Future Directions”.
- Maria Chiara Pietrogrande, Mattia Mercuriali, Nicola Marchetti, Luisa Pasti, Dimitri Bacco, Gaetano Zanghirati, Francesco Dondi, University of Ferrara, Italy: “A chemometric approach based on the autocovariance function for handling complex signals from environmental monitoring”.
- Ester Papa, Paola Gramatica, University of Insubria, Italy: “QSAR modelling and multivariate analysis of the environmental behaviour of organic pollutants”
T13: Estimating personal exposures to air pollution
Organizer: Gavin Shaddik Chair: Gavin Shaddik
- Marta Blangiardo, Sylvia Richardson, Imperial College, UK: “A Bayesian model of time activity data for ecological studies with implications to the bias of disease risks”
- Duncan Lee, Gavin Shaddik, Ruth Salway, Jim Zidek, University of Glasgow, UK: “Using estimated personal exposures in studies of the effects of air pollution on health”
- Gulliver John, Blangiardo Marta, Briggs David, Hansell Anna, University of the West of Scotland, UK: “Simultaneous modelling of spatial and temporal variations in air pollution exposures for health risk assessment and epidemiological analysis”

T14: Assessment of ecosystem status
Organizer: Ron Smith Chair: Marian Scott
- Anne E Magurran, Stephen R Baillie, Steve T Buckland, Jan McP Dick, David A Elston, E Marian Scott, Ron Smith, Paul J. Somerfield, Allan Watt, University of St Andrews, :” Measuring Biodiversity in the context of Ecosystem Services”;
- Paul Warren, University of Albury-Wodonga, Australia: “A Causal Modelling Approach to Spatial and Temporal Confounding in Environmental Impact Studies”
- Ron Smith, Jan Dick, Centre for Ecology and Hydrology, Bush Estate: “Linking Statistics to Ecosystem Services Frameworks”

GRASPA/TIES SESSIONS
GT1: Bayesian multivariate spatial models
Organizer: Francesca Bruno Chair: Peter Guttorp
- Fedele Greco, Carlo Trivisano, Daniela Cocchi, University of Bologna, Italy: “A multivariate CAR model and its applications”
- Sudipto Banerjee, Yufen Zhang, James Hodges, University of Minnesota, USA: ” Smoothed ANOVA with spatial effects as a competitor to MCAR in multivariate spatial smoothing”
- Steve Sain, Geophysical Statistics Project–NCAR: ”Spatial Analysis of Regional Climate Model Ensembles”

GT2: Environmental Sampling Applications
Organizer: Lucio Barabesi, Don Stevens Chair: Lucio Barabesi
- Dick Brus, Jaap de Grujter, Wageningen University and Research Centre, The Netherlands: “A mixed, design-based model-based sampling approach for estimating global quantities in space-time”
- Don Stevens, Oregon State University, USA, “Using imputation to estimate trend and abundance in Coho Salmon numbers using a multi-period rotating panel sampling design”
- Hailemariam Temesgen, Vicente Monleon, Aaron Weiskittel, Duncan Wilson, Oregon State University, USA, “A tail of two phases: design and estimation of three foliage biomass”
- Sara Franceschi, University of Siena, Italy: “Sampling properties of spatial total estimators under tessellation stratified designs”

GT3: Statistical Modeling for Water Resources
Organizer: Sylvia Esterby Chair: Sylvia Esterby
- Vito Muggeo, Gianfranco Lovison, University of Palermo, Italy: “Score and quasi-score inference for change-points, with applications in marine ecology and groundwater monitoring”
- Gonçalves A. Manuela, Marco Costa, Universidade do Minho, Portugal: "Prediction of Water Quality Variables using State-Space and Linear Models for River Network Data "
- Guillaumé Evin, Anne-Catherine Favre, University of Québec, Canada: “A non-stationary Neyman-Scott model for rainfall”
GRASPA SESSIONS

G1: Spatiotemporal models
Organizer: Rosaria Ignaccolo Chair: Francesca Bruno
- Yongku Kim, Institute for Mathematics Applied to Geosciences, NCAR, USA: “Change of Spatiotemporal Scale in Dynamic Models”
- Veronica Berrocal, Alan Gelßand, Duke University, USA: ”A multivariate spatio-temporal downscaler for output from numerical models”
- Michela Cameletti, Rosaria Ignaccolo, Stefano Bande, University of Bergamo, Italy: “Comparing air quality statistical models”
- Pancrazio Bertaccini, Vanja Dukic, Rosaria Ignaccolo, University of Turin, Italy: “Air pollution: meteorology or traffic, what does really matter?”

G2: Environmental indices
Organizer: Alessandro Fassò Chair: Gianfranco Lovison
- Antonello Maruotti, Francesco Lagona, University of Rome, Italy: ”A Hurdle Markov model for pollutants concentrations”
- Antonella Plaia, Mariantonietta Ruggieri, Anna Lisa Bondì, University of Palermo, Italy: “An aggregate air quality index considering interactions among pollutants”
- Marian Scott, Duncan Lee, Claire Ferguson, Ron Smith, University of Glasgow, UK: ”Simple metrics, complex environmental systems”

G3: Air quality modeling
Organizer: Alessandro Fassò Chair: Alessandro Fassò
- Paul D.Sampson, Adam Szpiro, Lianne Sheppard, Johan Lindstrom, University of Washington, USA: “Spatial regression modeling with nonstationary spatial covariance structure for air quality exposure from complex spatio-temporal monitoring and GIS-based covariates”
- Francesco Finazzi, Cinzia D’Ariano, Alessandro Fassò, Gianandrea Mannarini, Orietta Nicolis, University of Bergamo, Italy: “Integrating satellite and ground level data for air quality monitoring and dynamical mapping”
- Wolfgang Schmid, Olha Bodnar, Universität Viadrina Frankfurt an der Oder, Germany: “Local Approaches for interpolating Air Pollution Processes”

G4: Source apportionment with multivariate receptor models
Organizer: Alessio Pollice Chair: Giovanna Jona Lasinio
- Alessio Pollice, University of Bari, Italy: ”A critical review of some statistical issues implied by the use of multivariate receptor models”
- Eleonora Andriani, Maurizio Caselli, Gianluigi De Gennaro, University of Bari, Italy: “Synergistic use of several receptor models (CMB, APCS and PMF) to interpret air quality data”
- Bo Larsen, IES, EU Joint Research Center, Ispra: ”A critical look at the fulfillment of basic assumptions for the application of the two common receptor models CMB and PMF for source apportionment of PM10”
- William F. Christensen, Basil Williams, Shane Reese, Brigham Young University, USA: “Identifying pollution source directions for pollution source apportionment”
G5: Environmental point process
Organizer: Marcello Chiodi Chair: Marcello Chiodi
- Rick Schoenberg, University of California, USA: “Separable conditional intensity estimates for space-time point processes with application to Los Angeles County wildfires”
- Crescenza Calculi, Alessio Pollice, University of Bari, Italy: “Joint incidence of various diseases in the presence of risk source”
- Renata Rotondi, Elisa Varini, CNR-IMATI, Italy: “Bayesian estimation of the conditional intensity function in self-correcting point processes applied to the seismic activity of Italian tectonic regions”
- Giada Adelfio, Marcello Chiodi, University of Palermo, Italy: “Semi-parametric estimation of the intensity function in space-time point processes”

G6: Extreme values for spatio-temporal data
Organizer: Jean-Noel Bacro, Liliane Bel Chair: Liliane Bel
- Simone Padoan, Anthony Davison, Mathieu Ribatet, Ecole Polytechnique Federale de Lausanne, Switzerland: “Modelling of spatial extremes: a review”
- Gwladys Toulemonde, Armelle Guillou, Philippe Naveau, Mathieu Vrac, Frédéric Chevallier, Université Montpellier II, France: “State-space models in extreme value theory”
- Mathieu Ribatet, Simone A. Padoan, Scott A. Sisson, EPFL, Lausanne, Switzerland: “Likelihood-based inference for max-stable processes”
- Pierre Ribereau, Armelle Guillou, Philippe Naveau, Université de Montpellier 2, France: “Generalized Probability Weighted Moments Methods in Extreme Value Theory”

G7: Nonparametric statistics and functional analysis in environmental problems
Organizer: Carlo Gaetan Chair: Carlo Gaetan
- Stefano Tonellato, Stefano Ciavatta, Andrea Pastore, Roberto Pastres, University of Venice, Italy: “Clustering of monitoring stations in Venice Lagoon”
- Sonia Petrone, Michele Guindani, Alan Gelfand, Bocconi University, Italy: “Bayesian nonparametric mixtures for local clustering of functional data”
- Jan-Michel Poggi, Francois-Xavier Jollois, Bruno Portier, Université Paris-Sud, France: “Three non-linear statistical methods to analyze PM10 pollution in Rouen area”
- David Dunson, Duke University, USA: “Bayesian density regression and mixtures with environmental applications”

G8: Wavelet-based analysis of environmental data
Organizer: Orietta Nicolis Chair: George Christakos
- Jorge Mateu, Orietta Nicolis, Universitat Jaume I, Spain: “Wavelet-based analysis of the spatial structure of point patterns”
- José Miguel Angulo, Ana E. Madrid, Universidad de Granada Facultad de Ciencias, Spain: “Wavelet-based multiscale intermittency analysis in environmental applications”
- Orietta Nicolis, George Christakos, University of Bergamo, Italy: “A unified framework of fractal and wavelet random fields”
- Emilio Porcu, Maria Dolores Ruiz Medina, Rosaura Ferndandez Pascual, Universitat Göttingen, Germany: “Functional estimation of Gaussian Dagum random fields and related models”

G9: Epidemiology
Organizer: Emanuela Dreassi Chair: Emanuela Dreassi
- Leonhard Held, Birgit Schrödle, University of Zurich, Switzerland: “Spatio-temporal disease mapping using INLA”
- Rossella Miglio, Francesca Bruno, University of Bologna, Italy, “Flexible statistical models in the study of vulnerability to environmental exposure”
- Dolores Catelan, Annibale Biggeri, Corrado Lagazio, University of Florence, Italy: “Epidemiologic surveillance and impact evaluation: the false discovery rate”
- Adam A. Szpiro, Lianne Sheppard, Thomas Lumley, University of Washington, USA: “Accounting for Exposure Measurement Error in Environmental Epidemiology”