

## INVITED SESSIONS – TIES 2010

*Affiliation refers to the speaker\* author when authors are more than one*

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### PLENARY SESSIONS

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**John Stuart Hunter Lecture:** Anders Grimvall. Linköpings Universitet, Sweden: **Environmetrics for a data rich world.** Chair: Don Stevens

**Date:** Monday 21st June 2010 **Hour:** 9:30 am

**Room:** Manzanillo 1 & 2

**President's Invited Lecture:** Bruno Sansó. University of California in Santa Cruz, USA: **Hierarchical Bayesian Ocean Models.** Chair: Daniela Cocchi

**Date:** Tuesday 22nd June 2010 **Hour:** 9:45 am

**Room:** Manzanillo 1 & 2

**TIES 2010 Invited Lecture:** José Rafael León. Universidad Central de Venezuela: **Transport of pollutants in Lake of Valencia, Venezuela.** Chair: Lelys Guenni

**Date:** Thursday 24<sup>th</sup> June 2010 **Hour:** 9:30 am

**Room:** Manzanillo 1 & 2

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**T1: Monitoring of large-scale natural resources**

**Organizer:** Melissa Dobbie, CSIRO, Australia

**Chair:** Jay Ver Hoef

**Date:** Monday 21<sup>st</sup> June 2010

**Room:** Manzanillo 1 & 2

- 11:00 am Don Stevens\*; Julie Firman; Quinn Payton; Lisa Madsen, Statistics Department, Oregon State University, USA: **Assessing the Regularity of Occupancy Patterns for Spawning Coho Salmon**
- 11:25 am Temesgen H.\*; J. Strunk; H-E. Andersen, Oregon State University, USA: **Estimating Biomass Change in Coastal Alaska Forests: Statistical Issues**
- 11:50 am Melissa Dobbie\*; Don Stevens; Charis Burrige, CSIRO, Australia: **Where to put the dots on the map?: Considerations for choosing between different spatial designs for assessing large-scale river networks**

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**T2: Change Point Detection Methods**

**Organizer:** Anders Grimvall, Linköpings Universitet, Sweden

**Chair:** Peter Guttorp

**Date:** Monday 21<sup>st</sup> June 2010

**Room:** Manzanillo 3

- 11:00 am Emilie Lebarbier\*; Franck Picard; Eva Budinska; Stéphane Robin, AgroParisTech, France: **Joint segmentation using mixed linear models: application to detect changes in harvest data**
- 11:25 am Du Yang; Anders Nordgaard\*, Department of Computer and Information Science, Linköping University, Sweden: **Change-point detection in environmental time series – A Bayesian approach**
- 11:50 am Anders Grimvall, Linköping University, Sweden: **Bias in the correction for artificial change-points**

**T3: Model based geostatistics** **Date:** Monday 21<sup>st</sup> June 2010  
**Organizer:** Veronica Berrocal, Statistical and Applied Mathematical Sciences Institute, USA  
**Chair:** Caragea Petrutza **Room:** Manzanillo 1 & 2

- 2:30 pm Veronica J. Berrocal\*; Alan E. Gelfand; David M. Holland, SAMSI. North Carolina, USA: **Fusing space-time data under measurement error for computer model output**
- 2:55 pm Brian Reich, North Carolina State University, USA: **A class of covariate-dependent spatio-temporal covariance functions**
- 3:20 pm Rajarshi Guhaniyogi; Andrew O. Finley; Sudipto Banerjee\*; Alan E. Gelfand, University of Minnesota, USA: **Adaptive Predictive Process Models for Large Spatial Datasets**
- 3:45 pm Ingelin Steinsland\*; Veronica J. Berrocal; Brian J. Reich, Norwegian Technological University, Norway: **Spatial predictive distribution for precipitation based on numerical weather predictions (NWP)**

**T4: Hierarchical Spatial Modeling** **Date:** Wednesday 23<sup>rd</sup> June 2010  
**Organizer:** Sudipto Banerjee, University of Minnesota, USA **Room:** Manzanillo 1 & 2  
**Chair:** Veronica Berrocal

- 4:15 pm Murali Haran, Pennsylvania State University, USA: **On Gaussian process models for learning about climate model parameters.**
- 4:40 pm Caragea Petrutza, Iowa State University, USA: **Increasing the accuracy of wind speed forecasts by combining the output of process model ensembles and stochastic models.**
- 5:05 pm Enrico Fabrizi; Fedele Greco\*; Carlo Trivisano, University of Bologna, Italy: **A sensitivity analysis of prior specification in disease mapping.**

**T5: Functional data analysis in environmental problems** **Date:** Tuesday 22<sup>nd</sup> June 2010  
**Organizer:** Daniela Cocchi, University of Bologna, Italy **Room:** M 1+2  
**Chair:** Giovanna Jona Lasinio

- 8:30 am Francesca Bruno, Daniela Cocchi; Fedele Greco\*, University of Bologna, Italy: **Functional Cluster Analysis for particulate matter vertical profiles**
- 8:55 am Stefania Ghigo\*; Rosaria Ignacolo; Stefano Bande, Università degli Studi di Torino, Torino, Italy: **Functional approach to cluster municipalities with respect to air quality assessment**
- 9:20 am Liliane Bel\*; Avner Bar-Hen; Rémi Petit; Rachid Cheddadi, AgroParisTech, France: **Spatio-temporal functional regression on paleo-ecological data.**

**T6: Complex modeling of Multivariate Environmental Data** **Date:** Wednesday 23<sup>rd</sup> June 2010  
**Organizer:** Daniela Cocchi, University of Bologna, Italy **Room:** Manzanillo 1 & 2  
**Chair:** Liliane Bel

- 8:15 am Francesco Lagona\*; Antonello Maruotti; Marco Picone, University Roma Tre, Italy: **Hidden Markov Models for incomplete multivariate environmental data**
- 8:40 am Michael F. Hutchinson, Australian National University, Australia: **The Role of Topography in Environmental Analysis**
- 9:05 am Alessio Pollice; Giovanna Jona Lasinio\*, "Sapienza" University of Rome, Italy: **Major**

### PM10 source location by a spatial multivariate receptor model

**T7: Advances in the Analysis of Animal Satellite Telemetry Data**      **Date:** Thursday 24<sup>th</sup> of June 2010  
**Organizer:** Jay Ver Hoef      **Room:** Manzanillo 1 & 2  
**Chair:** Don Stevens

- 11:00 am Jay M. Ver Hoef, NOAA National Marine Mammal Lab, USA: **Logistic Models for Large Data Sets with Temporal Autocorrelation for Multiple Animals: Marine Mammal Haul-out Models**
- 11:25 am Megan D. Higgs\*, Jay Ver Hoef, Montana State University, USA: **Discretized and aggregated: Hierarchical models for ordered categorical multinomial data with temporal autocorrelation**
- 11:50 am Mevin B. Hooten, Devin S. Johnson; Ephraim M. Hanks\*, Utah State University, USA: **Resource Selection from Animal Movement Models.**

**T8: Modelling in Forestry: Attributes, Inventory and Fires**      **Date:** Thursday 24<sup>th</sup> of June 2010  
**Organizer:** Sylvia Esterby, University of British Columbia, Canada      **Room:** Manzanillo 3  
**Chair:** Sylvia Esterby

- 2:30 pm Andrew O. Finley\*, Sudipto Banerjee, Department of Forestry and Department of Geography, Michigan State University, East Lansing, Michigan, USA: **A hierarchical mixture model for estimating zero inflated continuous forest variables**
- 2:55 pm Paulo Justiniano Ribeiro Jr. , Universidade Federal do Parana, Brasil: **Geostatistical models and case studies in forestry sciences**
- 3:20 pm Charmaine Dean\*, Doug Woolford, Jiguo Cao and Dave Martell , Simon Fraser University, Canada: **Climate Change-Caused Shifts in Canadian Forest Fire Ignitions: Models, Tests, and Their Power**

**T9: What's the buzz over hierarchical modeling in environmetrics?**      **Date:** Wednesday 23<sup>rd</sup> June 2010  
**Organizer:** Grace Chiu, CSIRO, Australia      **Room:** Manzanillo 3  
**Chair:** Sudipto Banerjee

- 8:15 am Ayesha Ali, University of Guelph, Canada: **Graphical Models and Pollination**
- 8:40 am Simon Barry, CSIRO, Australia: **Hierarchical modelling – an end in itself or a means to an end.**
- 9:05 am Peter Guttorp, University of Washington, USA: **Trying to sell Bayesian hierarchic models to climatologists**

**T10: Methods for the Analysis of Spatial Zero-Heavy Count Data**      **Date:** Thursday 24<sup>th</sup> of June 2010  
**Organizer:** Charmaine Dean, Simon Fraser University, Canada      **Room:** Manzanillo 3  
**Chair:** Bruce Lauckner

- 11:00 am Laurie Ainsworth\*, Charmaine Dean, Simon Fraser University, Canada: **Zero-inflated Spatial Models for Environmental data: Clustered Zeros versus Spatial Outliers**
- 11:25 am Daniel B. Hall\*, Jing Shen, University of Georgia, USA: **Robust Zero-inflated Poisson Regression**
- 11:50 am Steve Rathbun, University of Georgia, USA: **Bayesian Inference for Spatial Zero-Inflated Poisson Regression Models: Oak Regeneration**

**T11: Statistics in Agriculture****Organizer:** Charmaine Dean, Simon Fraser University, Canada**Chair:** Daniel Hall**Date:** Thursday 24<sup>th</sup> of June 2010**Room:** Manzanillo 3

- 12:15 pm Bruce Lauckner, Head Biometrician, Caribbean Agricultural Research and Development Institute, Trinidad and Tobago: **Agricultural Research in the Caribbean: Challenges for the Biometrician**
- 12:40 pm Ramiro Ruiz\*, Elias Teixeira Krainski, Department of Statistics, Federal University of Minas Gerais, Belo Horizonte - Brazil: **Pricing Area Yield Crop Insurance Contracts: Spatio-Temporal Approaches**
- 1:05 pm Nathaniel K. Newlands; Reza Hosseini\*, Environmental Health, Research Branch, Agriculture and Agri-Food Canada (AAFC), Lethbridge Research Centre, Canada: **Statistical modeling of agroecosystems in a changing climate**

**T12: Some Issues in Water Quality Assessment****Organizer:** Abdel El-Shaarawi, Mc Master University, Canada**Chair:** Bovas Abraham**Date:** Wednesday 23<sup>rd</sup> June 2010**Room:** Manzanillo 1 & 2

- 11:15 am Renjun Ma\*, Guohua Yan, Tariqul Hasan, University of New Brunswick, Canada: **Analysis of Serially Correlated Semi-continuous Data with Environmental Applications**
- 11:40 am Sylvia R. Esterby\*, Mohammad Shahidul Islam, Abdel H. El-Shaarawi, University of British Columbia, Canada: **Estimation of Parameters from Environmental Data with Below-Detection-Limit Observations**
- 12:05 pm Teodoro García\*, José García, María Yopez, Universidad de Carabobo, Venezuela: **Reducing the environmental impact of a toilet paper factory in the North-Central area of Venezuela using clarified water**
- 12:30 pm Shojaeddin Chenouri\*, Abdel El-Shaarawi, University of Waterloo, Canada: **Nonparametric Multivariate Methods in Studying Impact of Agricultural Pollution on Water Quality**

**T13: Local Environmental Statistics Outreach****Organizer:** Lelys Guenni, Universidad Simón Bolívar, Venezuela**Chair:** Bruno Sansó**Date:** Tuesday 22nd June 2010**Room:** Manzanillo 3

- 11:15 am Carenne Ludeña, Instituto Venezolano de Investigaciones Científicas, Venezuela: **Spatio-temporal models for the mean and extreme values rainfall fields in the Caroni river basin in Venezuela.**
- 11:40 am Eduardo Klein\*, Iliana Chollett, Universidad Simón Bolívar, Venezuela: **Spatio-temporal dynamics of the Cariaco upwelling system: the sea surface temperature through a self organizing approach**
- 12:05 pm Alexis Durán, Lelys Guenni\*, Universidad Simón Bolívar, Venezuela: **Probabilistic Estimation of Climate Change in Venezuela using a Bayesian Approach**

**T14: Analysis of data from complex designs****Date:** Tuesday 22nd June 2010**Organizer:** Renjun Ma, University of New Brunswick, Canada**Room:** Manzanillo 3**Chair:** Abdel El-Shaarawi

- 8:30 am Juxin Liu\*; Paul Gustafson; Nicola Cherry; Igor Burstyn, University of Saskatchewan, Canada: **Bayesian Adjustment for Misclassification in Matched Case-Control Study**
- 8:55 am Yang Zhao \*; Jerald F Lawless; Donald L. McLeish, University of Regina, Canada: **Design and Relative Efficiency in Two-Phase Studies**
- 9:20 am Yanqing Yi, Memorial University of Newfoundland, Canada: **Asymptotic Analysis of Correlated Data from Adaptive Designs**

**T15: Spatio-temporal modeling in environmental and atmospheric sciences****Organizer:** Yulia R. Gel, University of Waterloo, Canada**Date:** Wednesday 23<sup>rd</sup> June 2010**Chair:** Reza Hosseini**Room:** Manzanillo 1 & 2

- 2:00 pm Abdel H. El-Shaarawi, National Water Research Institute and McMaster University, Canada: **How effective is water quality monitoring using microbial indicators? A Canadian case study on agricultural pollution.**
- 2:25 pm Bovas Abraham, University of Waterloo, Canada: **Modeling of temporal trends and variability in water quality.**
- 2:50 pm Lilia Leticia Ramirez\*, Ziming Huang, Yulia R. Gel, University of Waterloo, Canada: **Probabilistic Weather Forecasting using the Geostatistical Output Perturbation Method on Hierarchical Bayesian space-time Models.**

**T16: Spatial design in environmental field****Date:** Wednesday 23<sup>rd</sup> June 2010**Organizer:** Liliane Bel, AgroParisTech (dépt MMIP), France**Room:** Manzanillo 3**Chair:** Charmaine Dean

- 2:00 pm David Makowski \*; Liliane Bel; Eric Parent, UMR 211, Agronomie, INRA, France: **Simulation-based optimal design for estimating weed density in agricultural fields**
- 2:25 pm Lin Wu\*, Marc Bocquet., Université Paris-Est, CEREAS, joint laboratory École des Ponts ParisTech - EDF R&D, France: **Network Design for Ozone Monitoring over France: Reduction of Redundant Stations and Displacement of Background Stations**
- 2:50 pm Pascal Monestiez\*, Nathalie Di-Méglio, Léa David, Biostatistics and Spatial Processes, INRA, France: **Comparing permanent versus random line-transect surveys in a geostatistical model-based framework: application to annual change monitoring of Mediterranean fin whale abundance**