

TIES 2012 – Invited Speaker Sessions

Invited Session #1

Date: Tuesday, January 3, 2012

Time: 2:30 pm – 4:30 pm

Room:

Title: Statistical Issues in Ecological and Environmental Studies – 1

Organizers: Bikas K. Sinha and Bidyut Roy, Indian Statistical Institute Calcutta, INDIA

Chair: Ratan Dasgupta, Indian Statistical Institute Calcutta, INDIA

Speakers:

Bikas K. Sinha, Indian Statistical Institute Calcutta, INDIA

TOPSIS method of pollution data analysis: An overview

Dilip C. Nath, Gauhati University, INDIA

Population increase and deforestation in kokrajhar district of Assam

Sabyasachi Bhattacharyya, Indian Statistical Institute Calcutta, INDIA

Cooperative recovery mechanism: A safeguard for minimizing extinction risk

Santanu Ray, Viswa Bharati University, INDIA

Simulation modelling of carbon cycling from Mangrove litter to the adjacent Hooghly estuary, India

Invited Session #2

Date: Tuesday, January 3, 2012

Time: 2:30 pm – 4:30 pm **Room:**

Title: Remote Sensing and Natural Resource Management

Organizer: P. S. Roy, Centre for Space Science and Technology Education for Asia and The Pacific (CSTEAP), INDIA

Chair: Katta Jayaram Reddy, University of Wyoming, USA

Speakers:

P. S. Roy, CSTEAP, INDIA

Earth observation systems and geoinformatics for environmental information science

Y. V. N. Krishnamurthy, National Remote Sensing Center Hyderabad, INDIA

Rural development and decentralized planning

Satish C. Shenoi, INDIA

Title: TBA

Suhas P. Wani, ICRISAT, INDIA

Title: TBA

Invited Session #3

Date: Tuesday, January 3, 2012

Time: 4:50 pm – 6:20 pm **Room:**

Title: Hierarchical Models for Spatial-Temporal Datasets

Organizer: Sudipto Banerjee, University of Minnesota, USA

Chair: Giovanna Jona Lasinio, University of Roma La Sapienza, ITALY

Speakers:

Peter Craigmile (El-Shaarawi Young Researcher Award Winner), Ohio State University
Columbus, USA

Spectral-based methods for space-time models

Veronica J. Berrocol, University Michigan, USA

Directional weights CAR models using Gaussian process mixing

Anastassia Baxevani, Gothenburg University, Chalmers University of Technology, SWEDEN

Dynamically evolving Gaussian spatial fields

Invited Session #4

Date: Tuesday, January 3, 2012

Time: 4:50 pm – 6:20 pm

Room:

Title: Spatio -Temporal Methods for Environmental Applications – 2

**Organizers: Hernando C. Ombao, Brown University, USA
Serge Guillas, University College London, UK**

Chair: Adrian Bowman, University of Glasgow, UK

Speakers:

Laura M. Sangalli, Politecnico di Milano, ITALY
Spatial data analysis over irregularly shaped domains

Serge Guillas, University College London, UK
Bivariate splines for ozone concentration forecasting

Marion Scott, University of Glasgow, UK
Spatial dependence of extreme flows in Scotland

Invited Session #5

Date: Tuesday, January 3, 2012

Time: 4:50 pm – 6:20 pm

Room:

Title: Modern Spatiotemporal Tools for Environmental Data

Organizer: Peter Guttorp, University of Washington, USA

Chair: Soutir Bandyopadhyay, Leigh University, USA

Speakers:

Dabashis Mondal, University of Chicago, USA
Smoothing wind fields from scatterometer data

Grace Chiu, CSIRO, AUSTRALIA
Making use of multiple soil moisture products through spatial modelling

Erin Peterson, CSIRO, AUSTRALIA & NCEAS, USA
Tools for spatial statistical modeling in stream networks: STARS & the SSN package

Invited Session #6

Date: Wednesday, January 4, 2012

Time: 10:10 am – 11:40 am **Room:**

Title: Statistical Issues in Ecological and Environmental Studies – 2

Organizers: Bikas K. Sinha and Bidyut Roy, Indian Statistical Institute Calcutta, INDIA

Chair: Sanat K. Sarkar, Temple University, USA

Speakers:

Ratan Dasgupta, Indian Statistical Institute Calcutta, INDIA

A characterization of Pareto distribution with applications to environmental data

Prabir G. Dastidar, Ministry of Earth Sciences, INDIA

Does research on ecology and environment reflect on the real issues of the countries? An analysis of research dynamics across the countries

Nairanjana Dasgupta, Washington State University, USA

Many to one comparisons in a longitudinal binary data set-up using quasi-likelihood methods

Invited Session #7

Date: Wednesday, January 4, 2012

Time: 10:10 am – 11:40 am **Room:**

Title: Mixture Models and Forecast Distributions for Mapping and Prediction

Organizer: Sylvia R. Esterby, University of British Columbia Okanagan, CANADA

Chair: Sylvia R. Esterby, CANADA

Speakers:

Paramjit Gill, University of British Columbia Okanagan, CANADA

Spatio-temporal modelling of precipitation in the Okanagan basin in British Columbia, Canada

Shaleen Jain, University of Maine Orono, USA

A derived distribution approach to water resources decision analysis based on probabilistic climate forecasts

Francesco Finazzi, University of Bergamo, ITALY

A multivariate spatio-temporal calibration model with space-time varying coefficients for the air quality assessment using remote sensing and ground level multipollutant data

Invited Session #8

Date: Wednesday, January 4, 2012

Time: 12:00 noon – 1:30 pm **Room:**

Title: Spatio Temporal Analysis

Organizer: Luigi Ippoliti, University G. d'Annunzio, ITALY

Chair: Serge Guillas, University College London, UK

Speakers:

Mosamam M. Ali, University of Zanjan, IRAN
Half-spectral modeling for spatio-temporal data

Pasquale Valentini, University G. d'Annunzio, ITALY
Bayesian dynamic factor models for spatio-temporal data

Venkataraman Sivakumar, University of Kwa-Zulu Natal, SOUTH AFRICA
TREND RUN model for performing the trend calculation on SAWS (South Africa Weather Service) atmospheric data

Invited Session #9

Date: Wednesday, January 4, 2012

Time: 12:00 noon – 1:30 pm **Room:**

Title: Monitoring and Assessment of Air Quality and Waste Management Impact

Organizer: Ivanka Horova, Masaryk University Brno, CZ

Chair: Alessandro Fasso, Università di Bergamo, ITALY

Speakers:

Jiri Herbicek, Masaryk University Brno, CZ
Analytical tools and statistics for air pollution assessment

Ivanka Horova, Masaryk University Brno, CZ
Kernel regression models for total ozone data

Sudhir Paul, University of Windsor, CANADA
Estimation of regression parameters for binary longitudinal data using GEE: Review, extension and an application to environmental data

Invited Session #10

Date: Wednesday, January 4, 2012

Time: 12:10 noon – 1:30 pm **Room:**

Title: Energy and Environment Related Issues for Sustainable Development

Organizers: M. N. V. Prasad, University of Hyderabad, INDIA

Chair: Sucharita Ghosh, Swiss Federal Research Institute WSL, SWITZERLAND

Speakers:

Jayaram Reddy Katta, University of Wyoming, USA
Anthropogenic CO₂, climate change, and solutions

Nabanita Dasgupta-Schubert, Universidad Michoacana, Cd. Universitaria, MEXICO
A systems model of the eco-physiological response of plants to environmental heavy metal concentrations

Nakbanpote Woranan, Mahasarakham University, THAILAND
*Phenolic compounds and Zn/Cd concentration in *Gynura pseudochina* (L.) DC. Extracts*

Invited Session #11

Date: Thursday, January 5, 2012

Time: 10:10 am – 11:40 am **Room:**

Title: Waterborne Diseases: Seasonality and Environmental Drivers – 1

Organizer: Elena Naumova, Tufts University, USA

Chair: Prasanna Samuel, Christian Medical College, India

Speakers:

N. Ashoori, Tufts University School of Engineering, USA
Water consumption patterns and enteric infection transmission in rural and urban settings of Vellore district, India.

A. Brown, Tufts University School of Engineering, USA
Land surface predictors of diarrheal diseases: a spatial comparison of urban slum and rural villages in Vellore, Tamil Nadu using GIS.

M. R. Francis, Christian Medical College, INDIA
Assessing the risks of water contamination and hot spots of diarrhoea in Southern India using GIS.

Invited Session #12

Date: Thursday, January 5, 2012

Time: 10:10 am – 11:40 am

Room:

Title: Statistics and Water Quality

Organizer: Bovas Abraham, University of Waterloo, CANADA

Chair: Abdel H. El-Shaarawi, National Water Research Institute, CANADA

Speakers:

N. Chandramohankumar, Oceanography, CUSAT, INDIA

The potable water scenario of Kerala: An overview with special reference to surface and ground water

Kanichikattu K. Jose St. Thomas College, INDIA

A counting model with Gumbel distributed inter arrival times and its applications in modeling climate data

Bovas Abraham, University of Waterloo, CANADA

Trend modeling and assessment in water quality

Invited Session #13

Date: Thursday, January 5, 2012

Time: 10:10 am – 11:40 am

Room:

Title: Hierarchical Modeling of Environmental Data

Organizer: Partha Lahiri, University of Maryland, USA

**Chair: Manfred Mudelsee, Climate Risk Analysis, GERMANY & Alfred Wegener
Institute for Polar and Marine Research, GERMANY**

Speakers:

Malay Ghosh, University of Florida, USA

Title: TBA

Snigdhanshu Chatterjee, University of Minnesota, USA

Modeling climate characteristics using distribution-free small area methodology

Partha Lahiri, University of Maryland, USA

Empirical Bayes estimation of power plant impingement

Invited Session #14

Date: Wednesday, January 4, 2012

Time: 12:00 noon – 1:30 pm **Room:**

Title: Trend, Long-Memory Detection and Modeling Environmental Data

Organizer: A. I. McLeod, University of Western Ontario, CANADA

Chair: Finn K. Lindgren, Lund University, SWEDEN

Speakers:

A.H. El-Shaarawi, National Water Research Institute, CANADA
Organic contaminants in the Niagara river during the past 25 years

A.I. McLeod, University of Western Ontario, CANADA
Monte-carlo testing for preservation of historical statistics in synthetic time series

Paul Cabilio, Acadia University, CANADA
Rank test for trend in time series

Invited Session #15

Date: Thursday, January 5, 2012

Time: 12:00 noon – 1:30 pm **Time:**

Title: Applications of Spatial Statistics to Environmental Science

Organizer: Noel Cressie, Ohio State University, USA

Chair: Wei-Liem Loh, National University of Singapore, SINGAPORE

Speakers:

Arindam Chatterjee, Indian Statistical Institute Delhi, INDIA
Variable Selection and penalized robust regression for spatial data

Sujit Ghosh, North Carolina State University, USA
Spatio-temporal analysis of total nitrate concentrations using dynamic statistical models

Rajib Paul, Western Michigan University, USA
Reduced rank spatial model with temporal confounding effects

Invited Session #16

Date: Thursday, January 5, 2012

Time: 12:00 noon – 1:30 pm **Room:**

Title: Statistical Issues in Climate: Past and Future

Organizer: John Haslett, Trinity College Dublin, IRELAND

Chair: Henrik Madsen, Technical University of Denmark, DENMARK

Speakers:

Sucharita Ghosh, Swiss Federal Research Institute WSL, SWITZERLAND

Some nonparametric curve estimation problems with applications to instrumental & proxy climate data

Manfred Mudelsee, Climate Risk Analysis, GERMANY & Alfred Wegener Institute for Polar and Marine Research, GERMANY

Paleoclimate time series analysis

Richard Chandler, University College London, UK

Rewarding strength, discounting weakness: combining information from multiple climate simulators

Invited Session #17

Date: Thursday, January 5, 2012

Time: 2:45 pm – 4:45 pm **Room:**

Title: Spatio-Temporal Methods for Environmental Applications – 1

Organizer: Soumendra N. Lahiri, Texas A & M University, USA

Chair: Yulia Gel, University of Waterloo, CANADA

Speakers:

Wei-Liem Loh, National University of Singapore, SINGAPORE

On fixed-domain asymptotics and covariance tapering in Gaussian Random field models

Soutir Bandyopadhyay, Leigh University, USA

Multiresolution Gaussian process model for the analysis of large spatial data sets

Sujit K. Sahu, University of Southampton, UK

High resolution Bayesian space-time modelling for ozone concentration levels

Samiran Sinha, Texas A & M University, USA

Handling missing values in spatial data

Invited Session #18

Date: Thursday, January 5, 2012

Time: 2:45 pm – 4:45 pm

Room:

Title: Statistical Issues in Ecological and Environmental Studies – 3

Organizers: Bikas K. Sinha and Bidyut Roy, Indian Statistical Institute Calcutta, INDIA

Chair: Bikas K. Sinha, Indian Statistical Institute Calcutta, INDIA

Speakers:

Sanat K. Sarkar, Temple University, USA

Detecting changes in East African vegetation using multiple testing methods

Asis Chattopadhyay, Calcutta University, INDIA

Independent component analysis and clustering for pollution data

Kalyan Das, Calcutta University, INDIA

Robust inference for generalized partially linear mixed models subject to censoring and missing covariates

Joydev Chattopadhyay, Indian Statistical Institute Calcutta, INDIA

Two classical existing problems in ecology – Paradox of enrichment and plankton paradox

Invited Session #19

Date: Thursday, January 5, 2012

Time: 2:45 pm – 4:45 pm

Room:

Title: Change-Point Methods for Environmental Data

Organizer: Ian B. MacNeill, University of Western Ontario, CANADA

Chair: Bovas Abraham, University of Waterloo, CANADA

Speakers:

Robert B. Lund, Clemson University, USA

Changes in North Atlantic Basin Hurricanes

Stergios B. Fotopoulos, Washington State University, USA

Asymptotic distribution and rate of convergence of change-point mle under contiguity

A. Kovalevski, Novosibirsk State Technical University, RUSSIA

A posterior change-point analysis in application to the dynamics of enteric infections and water turbidity in rural region of Russia

Ian B. MacNeill, University of Western Ontario, CANADA

Multiple change-point modelling of river flows

Invited Session #20

Date: Friday, January 6, 2012

Time: 10:10 am – 11:40 am

Room:

Title: Data Assimilation

Organizer: Kanti V. Mardia, University of Leeds, UK

Chair: Alan Gelfand, Duke University, USA

Speakers:

Kanti V. Mardia, University of Leeds, UK

Turbulence: Navier Stokes equation and new statistics

Finn K. Lindgren, Lund University, SWEDEN

Markovian Geostatistics

Giovanna Jona Lasinio, University of Roma La Sapienza, ITALY

Analyzing spatial directional data using wrapped Gaussian processes

Invited Session #21

Date: Friday, January 6, 2012

Time: 10:10 am – 11:40 am

Room:

Title: Change - Point Methods with Applications for Environmental Monitoring

Organizer: Venkata K. Jandhyala, Washington State University, USA

Chair: Robert B. Lund, Clemson University, USA

Speakers:

Daniela Jarušková, Czech Technical University, CZ

Detection of changes in mean of vectors with application to meteorology and hydrology

Stergios B. Fotopoulos, Washington State University, USA

Change-point analysis in linear Brownian processes

Venkata K. Jandhyala, Washington State University, USA

Change-point analysis of annual mean precipitation for northern, tropical and southern latitudes of the globe in the past century

Invited Session #22

Date: Friday, January 6, 2012

Time: 10:10 am – 11:40 am

Room:

Title: Aspects of Spatial and Environmental Sampling

Organizer: Don Stevens, Oregon State University, USA

Chair: Sujit Sahu, University of Southampton, UK

Speakers:

David Clifford, CSIRO, AUSTRALIA

The effect of preferential sampling of spatial data on variance estimates

Luigi Ippoliti, University G. d'Annunzio, ITALY

Generalized kriging for spatial sampling designs

Daniela Cocchi, University of Bologna, ITALY

Evaluating individual and group design-based spatial prediction

Invited Session #23

Date: Friday, January 6, 2012

Time: 12:00 noon – 1:30 pm

Room:

Title: Weather Forecasting in Application to Power Generation and Weather Derivatives

Organizer: Yulia Gel, University of Waterloo, CANADA

Chair: Daniela Jarušková, Czech Technical University, CZ

Speakers:

John Boland, University of South Australia, AUSTRALIA

Statistical analysis in energy meteorology

Henrik Madsen, Technical University of Denmark, DENMARK

A review of the state-of-the-art in forecasting of short-term renewable energy generation

Yulia Gel, University of Waterloo, CANADA

Catching uncertainty of wind: A Bayesian blend of bootstrap and Markov switching models for probabilistic forecasting of wind speed

Invited Session #24

Date: Friday, January 6, 2012

Time: 12:00 noon – 1:30 pm **Room:**

Title: Agri Environmental Informatics

Organizer: Bronwyn Harch, CSIRO, AUSTRALIA

Chair: Marian Scott, University of Glasgow, UK

Speakers:

Melissa Dobbie, CSIRO, AUSTRALIA

Making meaningful inferences about environmental indices

Kaye Basford, University of Queensland, AUSTRALIA

Using status analysis for selection

Bronwyn Harch, CSIRO, AUSTRALIA

Agri-environmental informatics: The contribution of statistical science and statisticians

Invited Session #25

Date: Friday, January 6, 2012

Time: 12:00 noon – 1:30 pm **Room:**

Title: Waterborne Diseases: Seasonality and Environmental Drivers – 2

Organizer: Elena Naumova, Tufts University, USA

Chair: Venkata Mohan, Christian Medical College, India

Speakers:

O. K. Alsova, Novosibirsk State Technical University, RUSSIA

Identification of time series for infectious diseases: The use of co-joint modeling

A. Brown, Tufts University School of Engineering, USA

The use of meteorological variables to predict peaking of Barmah Forest Virus and Cryptosporidiosis in Australia.

P. Samuel, Christian Medical College, INDIA

Longitudinal assessment of hygiene scores in birth cohort studies