

Sunday Shortcourse: Modeling Environmental Extremes

Arts 376 David Walshaw and Lee Fawcett

8:30 - 9:00 Welcome and Continental Breakfast

9:00 - 10:00 Intro: Classical Models and Threshold Models

10:00 - 11:00 Dependence and Non-Stationarity

11:00 - 11:30 CoffeeArts Foyer 3rd floor

11:30 - 12:30 Hands-on R Session: Weather Extremes (Arts 215)

12:30 - 13:30 Lunch

Cafeteria

13:30 - 14:30 Multivariate Extremes and Point-Processes

14:30 - 15:30 Bayesian Inference for Extremes

15:30 - 16:00 CoffeeArts Foyer 3rd floor

16:00 - 17:00 Hands-on R Session: Multivariate Methods and Bayesian Inference (Arts 215)

17:00 - 17:30 Feedback/Discussion

15:00 - 20:00 RegistrationArts Foyer 1st floor**19:00 - 21:00 Welcome Reception**

Sun Room

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| 8:00 - | Registration |
| Arts Foyer 1 st floor | |
| Monday | Welcome |
| Arts 366 | |
| Monday | J. Stuart Hunter Lecture |
| Arts 366 | Chair: David Brillinger |
| 8:45 - 9:45 | Change Point Analysis of Extreme Values <i>Goedele Dierckx, Jef L. Teugels</i> |
| 9:45 - 10:15 | Coffee |
| Arts Foyer 1 st floor | |
| Monday | Spatial-Temporal Analysis of Environmental Health Data I |
| Arts 366 | Organizer: Montserrat Fuentes Chair: Peter Guttorp |
| 10:15 - 10:45 | Hierarchical Spatial Modeling of Additive and Dominance Genetic Variance for Large Spatial Trial Datasets <i>Sudipto Banerjee, Andrew O. Finley, Patrick Waldmann, Tore Ericsson</i> |
| 10:45 - 11:15 | Bayesian Variable Selection for Spatially-Varying Coefficient Regression: Application to Physical Activity in Pregnant Women <i>Montserrat Fuentes, Brian Reich, Amy Herring</i> |
| 11:15 - 11:45 | Mean, Median, Mode, More <i>Tilmann Gneiting</i> |
| Monday | Sampling |
| Arts 376 | Chair: Subhash Lele |
| 10:15 - 10:45 | Adaptive Model-Based Sampling Selection Methods with Computational Ease <i>Chang-Tai Chao</i> |
| 10:45 - 11:15 | Conventional and Adaptive Designs for Estimating Bull Trout Redd Abundance <i>William B. Gaeuman</i> |
| 11:15 - 11:45 | Using Tools from Classic Sampling Design in Assessing Efficiency of Wildlife Surveys <i>Joel H. Reynolds</i> |
| Monday | Ozone and Trends |
| Arts 386 | Chair: Bruce Smith |
| 10:15 - 10:45 | Regional Ground-Level Ozone Trends in Context of Meteorological Influences Across Canada and Eastern United States using Mixed Model for 1997-2006 <i>Elton Chan</i> |
| 10:45 - 11:15 | The Canadian Environmental Sustainability Indicators: On Population Weighted Ground-Level Ozone <i>Soheil Rastan, Lauren Dong, Joe St. Lawrence</i> |
| 11:15 - 11:45 | Quantifying Local Creation and Regional Transport using a Hierarchical Space-Time Model of Ozone as a Function of Observed NO _x , a Latent Space-Time VOC Process, Emissions, and Meteorology <i>Amy Nail, Jacqueline Hughes-Oliver, John Monahan</i> |
| 11:45 - 12:15 | Poster Presentations |
| Arts Foyer 3 rd floor | |
| 12:15 - 13:15 | Lunch |
| Sun Room | |

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| Monday | Spatio-Temporal Models for Air Quality and Epidemiology |
| Arts 366 | Organizer and Chair: Alessandro Fasso |
| 13:15 - 13:45 | A Multivariate Approach to the Analysis of Air Quality in a High Environmental Risk Area <i>Alessio Pollice, Giovanna Jona Lasinio, Serena Arima</i> |
| 13:45 - 14:15 | Functional Zoning on Corrected Air Quality Model Output <i>Rosaria Ignaccolo, Stefania Ghigo, Stefano Bande</i> |
| 14:15 - 14:45 | Spatio-Temporal Models for Count Data <i>Monica Chiogna, Carlo Gaetan</i> |
| 14:45 - 15:15 | Modelling Particulate Matter Vertical Profiles <i>Francesca Bruno, Daniela Cocchi, Fedele Greco</i> |
| Monday | Count Data and Species Abundance |
| Arts 376 | Chair: Joel Reynolds |
| 13:15 - 13:45 | Estimating Species Abundance from Distribution Maps <i>Fangliang He</i> |
| 13:45 - 14:15 | A Penalized Likelihood Approach to Modeling Spatial Counts and Mapping Indices of Aggregation <i>Nels Grevstad</i> |
| 14:15 - 14:45 | Maximum Likelihood for Spatially Dependent Data <i>Lisa Madsen</i> |
| 14:45 - 15:15 | Estimating Multinomial Means under Detection Error Assumptions <i>Brian R. Gray, Mark D. Holland</i> |
| Monday | Climate and Extremes: Methods and Applications |
| Arts 386 | Chair: Donald J. Noakes |
| 13:15 - 13:45 | Mixed Model-based Additive Models for Sample Extremes <i>Simone Padoan, Matt Wand, Stuart Coles</i> |
| 13:45 - 14:15 | Extreme Value Models with Time-Dependent Parameters in Climate Changes Studies <i>Jan Picek, Jan Kysely, Romana Beranova</i> |
| 14:15 - 14:45 | A Comparison of Methods for Detecting Discontinuities in Climatological Time Series <i>Lucie Vincent</i> |
| 14:45 - 15:15 | A Comparison of Several Regional Climate Model Outputs using an Extended Model for Large Spatio-Temporal Lattices <i>Ernst Linder, Stephan Sain</i> |
| 15:15 - 15:45 | Coffee |
| Arts Foyer 1 st floor | |

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| Monday | Ecological Sampling |
| Arts 366 | Organizer and Chair: Paramjit Gill |
| 15:45 - 16:15 | Designed Experiments in Mark-Recapture <i>Carl James Schwarz</i> |
| 16:15 - 16:45 | Adaptive Web Sampling for Spatially Uneven Populations <i>Steve Thompson</i> |
| 16:45 - 17:15 | Site Occupancy and Detection Error: What Can We Do with a Single Visit? <i>Subhash Lele, Monica Moreno, Erin Bayne</i> |
| Monday | Modelling Health Effects |
| Arts 376 | Chair: Jason Loepky |
| 15:45 - 16:15 | Hazard Function and Underlying Deterministic Process <i>Ivana Horova, Zdenek Pospisil, Jiri Zelinka</i> |
| 16:15 - 16:45 | The Effects of Air Pollution Exposure on Public Health in Scotland: A Small Area Multi-City Study <i>Duncan Lee, Claire Ferguson</i> |
| 16:45 - 17:15 | Modeling Environmental Noises and Stochastic Population Dynamics <i>Gao Meng</i> |
| Monday | Methods for Trends and Change-Point Detection |
| Arts 386 | Chair: Edit Gombay |
| 15:45 - 16:15 | Comparison of Tests for Change Point Detection for Dependent Data <i>Monika Rencova</i> |
| 16:15 - 16:45 | Fast Estimation of Spatially Dependent Temporal Trends using Gaussian Markov Random Fields <i>David Bolin, Johan Lindström, Lars Eklundh, Finn Lindgren</i> |
| 16:45 - 17:15 | Parametric and Non Parametric Trend Tests for Series with Seasonality and Correlated Errors <i>M. do Rosario Ramos, Teresa Alpuim</i> |
| Monday | Panel Session: Training for a Career in Environmetrics |
| Arts 366 | Organizers: Laurie Ainsworth, Carolyn Huston, Douglas Woolford Chair: Douglas Woolford |
| 17:15 - 18:15 | Panelists: <i>Grace Chiu, Montserrat Fuentes, Carolyn Huston, Subhash Lele, Ying Zhang</i> |

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| 8:00 - | Registration |
| Arts Foyer 3 rd floor | |
| Tuesday | Sustainability and Point Processes |
| Arts 366 | Organizer and Chair: Hao Zhang |
| 8:30 - 9:00 | Past Temperature Reconstruction using a Bayesian Hierarchical Model <i>Bo Li</i> |
| 9:00 - 9:30 | Sustainability, Climate Change and Uncertainty <i>Bryan C. Pijanowski</i> |
| 9:30 - 10:00 | Process Convolution Approximation for Large Spatial Dataset <i>Tonglin Zhang</i> |
| Tuesday | Fire Spread Modelling |
| Arts 376 | Organizers: John Braun, David Brillinger Chair: John Braun |
| 8:30 - 9:00 | Incorporating Stochasticity in the Prometheus Fire Growth Simulation Model <i>Cordy Tymstra, W. John Braun</i> |
| 9:00 - 9:30 | Mapping Wildfire Spread Probabilities - a Hot Topic <i>Francis M. Fujioka</i> |
| 9:30 - 10:00 | Factors Influencing the Spread of Forest Fires and the Canadian Forest Fire Behaviour Prediction System <i>Mike Wotton</i> |
| Tuesday | Water Quality Modelling |
| Arts 386 | Chair: Loveday Conquest |
| 8:30 - 8:55 | Particle Size Distribution in Natural Water via Density Estimation <i>Jolanta Jarnicka</i> |
| 8:55 - 9:20 | Spatial Modelling of Water Quality on Large River Networks <i>David O'Donnell, Adrian Bowman, Marian Scott</i> |
| 9:20 - 9:45 | Searching of Periodic Components in the Lake Mina, Minnesota Time Series <i>Karim Rahim, Jeannine St. Jacques, David Thomson</i> |
| 9:45 - 10:10 | Quantitative Methods for Assessing Ecological Effect of Dam Construction and Operation <i>Bo Hu, Baoshan Cui</i> |
| 10:00 - 10:30 | Coffee |
| Arts Foyer 1 st floor | |

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| Tuesday | Landscape Level Risk Assessment |
| Arts 366 | Organizer and Chair: Bronwyn Harch |
| 10:30 - 11:00 | Linking Threats to Assets in Complex Ecological and Socio-Economic Systems: Qualitative Modelling for Tourism Development in Northwest Australia <i>Jeffrey M. Dambacher</i> |
| 11:00 - 11:30 | Estimation of Nonlinear Trends in Water Quality: An Improved Approach using Generalized Additive Models <i>Brent Henderson</i> |
| 11:30 - 12:00 | Streamflow Prediction using Functional-Coefficient Regression Models with Periodic Variation <i>Quanxi Shao, Heung Wong, Ming Li, Wai-Cheung Ip, Jun Xia</i> |
| Tuesday | Applications of Computer Models |
| Arts 376 | Organizer and Chair: Jason Loepky |
| 10:30 - 11:00 | Choosing the Sample Size of a Computer Experiment: A Practical Guide <i>Jason L. Loepky, Jerome Sacks, William J. Welch</i> |
| 11:00 - 11:30 | A Dispersion Model Based Approach for the Identification of Pollution Source Directions <i>C. Shane Reese, William F. Christensen, Basil Williams</i> |
| 11:30 - 12:00 | Combining Detailed Computer Simulations and Experimental Data <i>Dave Higdon</i> |
| Tuesday | Extreme Values and Turbulent Dispersion |
| Arts 386 | Chair: Shane Rollans |
| 10:30 - 11:00 | An Idealised Model of Turbulent Dispersion <i>Nils Mole</i> |
| 11:00 - 11:30 | Extreme Values of Contaminant Concentration in the Atmospheric Boundary-Layer <i>Nils Mole, Thomas Schopflocher, Paul Sullivan</i> |
| 11:30 - 12:00 | A Model for Extreme Values of Concentration in Turbulent Dispersion <i>Nils Mole, Thomas Schopflocher, Paul Sullivan</i> |
| 12:00 - 13:00 | Lunch |
| Sun Room | |
| 13:00 - 13:30 | Poster Presentations |
| Arts Foyer 3 rd floor | |

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| Tuesday | Monitoring, Modelling and Managing Environmental Systems |
| Arts 366 | Organizer and Chair: Paramjit Gill |
| 13:30 - 14:00 | Modeling Nova Scotia Groundlevel Ozone Concentrations <i>Bruce Smith, Swarna Weerasinghe</i> |
| 14:00 - 14:30 | Joint Spatial Modelling of Recurrent Tree Infection and Growth with Processes under Intermittent Observation <i>Farouk Nathoo</i> |
| 14:30 - 15:00 | Effect of the Northern Atlantic Oscillation Index on Precipitation in Northern Quebec <i>Jean-Francois Angers, Felix Labrecque-Synnott</i> |
| 15:00 - 15:30 | Stochastically Modelling Forest Fire Spread <i>W. John Braun, Qiang Fu, Yu Han</i> |
| Tuesday | Return Values and Extremes - Temperature and Precipitation |
| Arts 376 | Chair: A. S. Gargoum |
| 13:30 - 14:00 | Return Levels, Temperature Extremes and Statistical Simulation Models <i>Gregory Benmenzer, Hoang Thi Thu Huong, Didier Dacunha-Castelle</i> |
| 14:00 - 14:30 | Some Methodological Problems about the Return Levels of Temperature Extrapolated using Greenhouse Gases and Aerosols Evolutions <i>Sylvie Parey, Hoang Thi Thu Huong, Didier Dacunha-Castelle</i> |
| 14:30 - 15:00 | Trends in Precipitation Extremes at Different Time Resolutions <i>Agne Burauskaite-Harju, Anders Grimvall, Claudia von Brömssen</i> |
| Tuesday | Contaminated Sites and Emission Projections |
| Arts 386 | Chair: Paul Sampson |
| 13:30 - 14:00 | Computation of Uncertainty for Atmospheric Emission Projections from Key Pollutant Sources in Spain <i>Carolina García-Martos, Julio Lumbreras, José Mira, Rafael Borge</i> |
| 14:00 - 14:30 | A Spatial Analysis of Emission Inventory Data: A Case Study in Poland <i>Joanna Horabik</i> |
| 14:30 - 15:00 | Development of a Ranking System for Contaminated Sites using Fuzzy PROMETHEE Method <i>Gopal Achari, Kejiang Zhang, Cheryl Kluck</i> |
| 15:00 - 15:30 | Similarity Analysis Exemplified by Data-Matrices of Soil Contaminations with Pesticides in the Alpine Region <i>Kristina Voigt, Rainer Brüggemann, Karl-Werner Schramm, Manfred Kirchner</i> |
| 15:30 - 16:00 | Coffee |
| Arts Foyer 1 st floor | |
| Tuesday | Panel Session: Current Research Challenges in Environmetrics |
| Arts 366 | Organizer and Chair: Jim Zidek |
| 16:00 - 17:30 | Panelists: <i>Charmaine Dean, Abdel El-Shaarawi, David Higdon, Peter Guttorp</i> |
| Tuesday | Annual General Meeting |
| Arts 366 | |
| 17:40 - | |

8:00 - RegistrationArts Foyer 3rd floor**Wednesday Spatio-Temporal Modelling I**

Arts 366 Organizer and Chair: Abdel El-Shaarawi

8:30 - 9:00 Evaluating Uncertainties for Receptor Modeling Estimates using the Jackknife and Gapped Bootstrap
*Cliff Spiegelman, Soumen Lahiri, Justice Appiah, Larry Rilett, Eun Sug Park*9:00 - 9:30 Modeling at the Source of Pollution
*Mark S. Kaiser, Petrutza C. Caragea*9:30 - 10:00 Testing for Periodicity in Short Time Series
*A. Ian McLeod, M.S. Islam***Wednesday Sampling Sustainable Resources**

Arts 376 Organizer and Chair: Don Stevens

8:30 - 9:00 Estimating Status of Forest Attributes from Paneled Inventory Data using Nearest Neighbor Imputation Approaches
*Bianca Eskelson, Hailemariam Temesgen, Tara Barrett*9:00 - 9:30 Efficiency of Some Sampling Alternatives to Estimate Tree- and Stand-Level Foliage Biomass
*Hailemariam Temesgen, A. R. Weiskittel, D.S. Wilson*9:30 - 10:00 Estimating Bird and Bat Fatalities at Wind Power Generation Facilities
*Manuela M. P. Huso***Wednesday Air Quality**

Arts 386 Chair: Ernst Linder

8:30 - 9:00 Traceability and Comparability of Air Quality Measurements in Europe
*Jari Walden*9:00 - 9:30 Uncertainty Analysis of Criteria Air Contaminants from Mobile Sources in Canada
*Mitch Murphy, Brett Taylor*9:30 - 10:00 Monitoring Air Quality in an Urban Area via a Multivariate Non-Homogeneous Hidden Markov Model
*Francesco Lagona, Antonello Maruotti***10:00 - 10:30 Coffee**Arts Foyer 1st floor

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| Wednesday | Spatial-Temporal Analysis of Environmental Health Data II |
| Arts 366 | Organizer: Montserrat Fuentes Chair: Tilmann Gneiting |
| 10:30 - 11:00 | Spatial Data Assimilation for Regional Environmental Exposure Studies <i>Catherine A. Calder, Peter, F. Craigmile, Hongfei Li, Rajib Paul, Noel Cressie</i> |
| 11:00 - 11:30 | Spatially Hierarchical Factor Models: Building a Social-Environmental Vulnerability Index for Uruguay <i>Hedibert Lopes, Alexandra Schmidt, Esther Salazar, Mariana Gómez, Marcel Achkar</i> |
| 11:30 - 12:00 | Changes in Long-Term Geographical Associations of Pollution with Mortality <i>Gavin Shaddick</i> |
| Wednesday | Communication of Risk and Uncertainty |
| Arts 376 | Organizer and Chair: Peter Guttorp |
| 10:30 - 11:00 | Some Examples of Water Pollution Risk Assessment and Communication in Canada <i>Abdel H. El-Shaarawi</i> |
| 11:00 - 11:30 | “An Estimate Without a Standard Error is Practically Meaningless.” H. Jeffreys <i>David R. Brillinger</i> |
| 11:30 - 12:00 | Managing and Communicating Uncertainty by Providing Innovation in the Environmental Services Economy <i>Bronwyn Harch</i> |
| Wednesday | Forests: Sampling, Assessment, and Fire |
| Arts 386 | Chair: Rong Zhu |
| 10:30 - 11:00 | Double-Expansion and Ratio Estimators of Tree Volume in Two-Phase Bitterlich and Plot Sampling <i>Piermaria Corona, Lorenzo Fattorini, Sara Franceschi</i> |
| 11:00 - 11:30 | Smoothed Prediction of the Onset of Tree Stem Radius Increase Based on Temperature Patterns <i>Mikko Korpela, Harri Mäkinen, Mika Sulkava, Pekka Nöjd, Jaakko Hollmén</i> |
| 11:30 - 12:00 | Application of Marginal and Variogram Models to Assess Spatio-Temporal Autocorrelation in Predicting Forest Fire Occurrence in the Western Ghats, India <i>Narendran Kodandapani</i> |
| 12:00 - 13:00 | Lunch |
| Sun Room | |
| 12:50 - 13:20 | Poster Presentations |
| Arts Foyer 3 rd floor | |
| Wednesday | Tours |
| 13:30 - | Hiking Tour or Winery Tour (Return about 19:00) |

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| 8:00 - | Registration |
| Arts Foyer 3 rd floor | |
| Thursday | President's Invited Lecture |
| Arts 366 | Chair: David Brillinger |
| 8:30 - 9:30 | The Role of Statisticians in International Science Policy <i>Peter Guttorp</i> |
| Thursday | Extremes |
| Arts 366 | Organizer and Chair: David Walshaw |
| 9:35 - 10:05 | Spatial Extremes in Atmospheric Problems <i>Eric Gilleland</i> |
| 10:05 - 10:35 | A Hierarchical Model for Extreme Wind Speeds <i>Lee Fawcett, David Walshaw</i> |
| Thursday | Pollution Source Apportionment |
| Arts 376 | Organizer and Chair: William Christensen |
| 9:35 - 10:05 | Integrating Diverse Sources of Airshed Information in Pollution Source Apportionment <i>William F. Christensen, Matthew J. Heaton, C. Shane Reese</i> |
| 10:05 - 10:35 | Source Apportionment and Health Effects <i>Thomas Lumley</i> |
| Thursday | Ecosystem Models: Windows into an Uncertain Future I |
| Arts 386 | Organizer and Chair: Nathaniel Newlands |
| 9:35 - 9:55 | Understanding Farms as Ecosystems: The Role of Models <i>Henry H. Janzen</i> |
| 9:55 - 10:15 | Integration of Multiple Datasets for Regional Water Supply-Demand Modeling in the Okanagan Region of British Columbia <i>Denise Neilsen, Ted Van der Gulik, Scott Smith, Bill Taylor, Alex Cannon</i> |
| 10:15 - 10:35 | "Keep It Simple" vs. "But It's Complicated!"; Modelling Dilemmas in Predicting Native Grassland Primary Productivity <i>Scott Mitchell</i> |
| 10:35 - 11:00 | Coffee |
| Arts Foyer 1 st floor | |

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| Thursday | Spatio-Temporal Modeling II |
| Arts 366 | Organizer and Chair: Abdel El-Shaarawi |
| 11:00 - 11:30 | A Spatio-Temporal State-Space Model for River Network Data <i>Lieven Clement, Olivier Thas</i> |
| 11:30 - 12:00 | Spatio-Temporal State-Space Models for River Network Data: Two Extensions <i>Lieven Clement, Olivier Thas</i> |
| 12:00 - 12:30 | Producing Statistical Ensembles of Weather Forecasts using Geostatistical Output Perturbation (GOP) Method: A Move Toward Non-Stationarity <i>Yulia R. Gel</i> |
| Thursday | Modelling Mountain Pine Beetle Spread |
| Arts 376 | Organizer and Chair: Charmaine Dean |
| 11:00 - 11:30 | Investigating for Climate Change Signals in Fire Ignitions and Area Burned <i>Jiguo Cao, Charmaine Dean, David Martell, Douglas Woolford</i> |
| 11:30 - 12:00 | Will Mountain Pine Beetle (<i>Dendroctonus Ponderosae</i> Hopk. (Coleoptera: Scolytidae)) Spread into Eastern Canada? A Module for the Local Population Dynamics <i>Richard A. Fleming, Jean-Noël Candau, Allan Carroll</i> |
| 12:00 - 12:30 | Spatial-Temporal Statistical Modeling of Mountain Pine Beetle Outbreak <i>Jun Zhu, Yanbing Zheng, Brian Aukema</i> |
| Thursday | Ecosystem Models: Windows into an Uncertain Future II |
| Arts 386 | Organizer and Chair: Nathaniel Newlands |
| 11:00 - 11:20 | Using the DSSAT-CSM Framework to Study Agriculture-Environment Relationships in Western Canada <i>Hong Wang</i> |
| 11:20 - 11:40 | Estimating the Effect that Climate Has on Crop Biomass Production at Long-Term Experimental Sites in Canada <i>Ward Smith, Brian Grant, Con Campbell, Ray Desjardins, Brian G. McConkey, Changsheng Li</i> |
| 11:40 - 12:00 | Integration of Economic and Biophysical Models for Determining Impact of Future Energy Demands of Greenhouse Gas Emissions and Fossil Fuel Use for Canadian Agriculture <i>Brian G. McConkey, Stephen Smith, Suren Kulshreshtha, Cecil Nagy, Darrel Cerkowniak, Bentham Murray, Ravinderpal Gill, Marie Boehm, Bob MacGregor</i> |
| 12:00 - 12:20 | Interoperable Web Service and Ecosystem Modelling: A Distributed Hydrological Model Use Case <i>Xiaoyuan Geng</i> |
| 12:20 - 12:40 | A Review of Ecosystem Models and Their Validation in Agricultural Applications <i>Nathaniel K. Newlands, Ward Smith, Grant Clark, Scott Mitchell, Abid Shah</i> |
| 12:30 - 13:45 | Lunch |
| Sun Room | |

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| Thursday | Spatial Modelling |
| Arts 366 | Organizer and Chair: Ulla Host |
| 13:45 - 14:15 | Spatial Scales and Spatial Regression Models of Air Quality Exposure from Complex Spatio-Temporal Monitoring and GIS-Based Land Use Covariates <i>Paul D. Sampson, Adam Szpiro, Lianne Sheppard</i> |
| 14:15 - 14:45 | Spatio-Temporal Modeling of Precipitation using Gaussian Markov Random Fields <i>Johan Lindström, Finn Lindgren</i> |
| 14:45 - 15:15 | The Image Warp for Evaluating Gridded Weather Forecasts <i>Johan Lindström, Eric Gilleland, Finn Lindgren</i> |
| Thursday | Statistical Methods for Environmental Data Analysis |
| Arts 376 | Organizer and Chair: Krishna Jandhyala |
| 13:45 - 14:15 | Methods for Detecting Changes in Temperature Series - Application to Prague Klementinum Temperature Series <i>Daniela Jaruskova</i> |
| 14:15 - 14:45 | Multi-Phase Regression with Applications <i>Hyune-Ju Kim</i> |
| 14:45 - 15:15 | Analysis of Massive Spatial Data <i>Hao Zhang</i> |
| Thursday | Ecosystem Models: Windows into an Uncertain Future III |
| Arts 386 | Organizer and Chair: Nathaniel Newlands |
| 13:45 - 14:05 | Combining Measurements with Ensemble Model Outputs by Bayesian Melding Model <i>Zhong Liu</i> |
| 14:05 - 14:25 | Transient Dynamics and Ecosystem Response to Environmental Perturbations <i>Xin Chen</i> |
| 14:25 - 14:45 | Stochastic Time-Delay Model of Nitrous Oxide Emission: Validation with Canadian Data <i>Nathaniel K. Newlands, Zhong Liu</i> |
| 14:45 - 15:15 | Discussion |
| 15:15 - 15:45 | Coffee |
| Arts Foyer 1 st floor | |

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| Thursday | Marine Ecology |
| Arts 366 | Organizer and Chair: Michael Dowd |
| 15:45 - 16:15 | Variable Selection in Additive Models with an Application to Logbook Data on Blue Sharks <i>Joanna Mills Flemming</i> |
| 16:15 - 16:45 | The Decline of the Steller Sea Lion: Challenges to Addressing a Dramatic Signal in the Dynamics of a Marine Ecosystem <i>Ruth Joy</i> |
| 16:45 - 17:15 | Food Web Modelling: Why Consider Longitudinal Social Networks and Bayesian Melding? <i>Grace Chiu</i> |
| Thursday | Changes in Environmental Data |
| Arts 376 | Organizer and Chair: Daniela Jaruskova |
| 15:45 - 16:15 | Change Detection in the Distribution of Data Described by Time Series <i>Edit Gombay</i> |
| 16:15 - 16:45 | Change-Point Analysis of Annual Rainfall from Tucumán, Argentina <i>Venkata K. Jandhyala, Jing You, Stergios B. Fotopoulos</i> |
| 16:45 - 17:15 | On Piecewise Linear Modelling of Temperature Time Series <i>Jaromir Antoch</i> |
| Thursday | Modelling of Covariates in Environmental Studies |
| Arts 386 | Organizer and Chair: Renjun Ma |
| 15:45 - 16:15 | Model Clustering and Its Application to Water Quality Monitoring <i>Rong Zhu, Abdel H. El-Shaarawi</i> |
| 16:15 - 16:45 | Towards Automating Model Selection for a Mark-Recapture-Recovery Analysis <i>Yanan Fan, Scott Sisson</i> |
| 16:45 - 17:15 | Statistical Inference in Nonlinear Systems with Mismeasured Covariates <i>Liqun Wang</i> |
| Thursday | Conference Banquet |
| Summerhill Winery | |
| 17:45 - | |

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| 8:00 - | Registration |
| Arts Foyer 3 rd floor | |
| Friday | Trend Analysis |
| Arts 376 | Organizer and Chair: McLeod A.I. |
| 8:30 - 9:00 | Trends in the Marine Survival of Hatchery and Wild Coho Salmon (<i>Oncorhynchus Kisutch</i>) in Relation to Shifts in Climate and Their Ecosystem <i>Donald J. Noakes, Richard J. Beamish, Ruston M. Sweeting, Chrys-Ellen M. Neville</i> |
| 9:00 - 9:30 | Predicting Fire Fighting Costs in the Province of Ontario <i>Rob McAlpine, Ou Feng, A. Ian McLeod, David A. Stanford</i> |
| 9:30 - 10:00 | A Spatio-Temporal Model for Antarctic Sea Ice Formation <i>Theodoro Koulis, Mary Thompson, Ellsworth LeDrew</i> |
| Friday | Monitoring and Modelling Environmental Data |
| Arts 386 | Chair: Kristina Voigt |
| 8:30 - 9:00 | Analysis of Correlated Environmental Monitoring Data with Non-detectable Values <i>Renjun Ma</i> |
| 9:00 - 9:30 | Assessing Positive Matrix Factorization Model Fit: Comparisons of Factor Profile Uncertainty Estimates Between the EPA PMF 1.1 Software and a Neural Network-based Method <i>Greg Brinkman, Steve Dutton, Michael Hannigan, Josh Hemann, Jana Milford, Shelly Miller</i> |
| 9:30 - 10:00 | Annual Patterns in the Historical Fire Weather Index <i>Zuzana Hrdlickova, Sylvia Esterby, Steve Taylor</i> |
| 10:00 - 10:30 | Coffee |
| Arts Foyer 1 st floor | |
| Friday | Sampling and Analysis Issues in Monitoring Salmonid Populations |
| Arts 376 | Organizer and Chair: Don Stevens |
| 10:30 - 11:00 | The Good Data Paradox: Lessons in Landscape Modeling for Coho Salmon in Western Oregon <i>Julie Firman, Kelly Burnett, Ashley Steel, Dave Jensen, Blake Feist, Kelly Christiansen, David P. Larsen, Erin Gilbert, Kara J. Anlauf</i> |
| 11:00 - 11:30 | Monitoring Aquatic Habitat Status and Trend in Coastal Watersheds of Oregon, USA <i>Kara J. Anlauf, William B. Gaeuman</i> |
| 11:30 - 12:00 | Efficient Spatially-Balanced Designs for Monitoring Status and Trends of Salmonid Populations <i>Don L. Stevens, Jr.</i> |
| Friday | Modelling Natural Systems |
| Arts 386 | Chair: Farouk Nathoo |
| 10:30 - 11:00 | Statistical Post-Processing of Forecasts using Ensemble Model Output Statistics <i>Thordis L. Thorarinsdottir, Tilmann Gneiting</i> |
| 11:00 - 11:30 | Simulating Long-Term Soil Carbon Dynamics - the K-Model Application <i>Tao Li, Yongsheng Feng, Xiaomei Li</i> |
| 11:30 - 12:00 | Data Assimilation for a PDE-based Physical-Biogeochemical Ocean Model <i>Paul Mattern, Michael Dowd, Katja Fennel</i> |
| 12:00 - 13:00 | Lunch |
| Sun Room | |

Posters

Energy Crises in Baghdad

Dheyaa Wajid Abbood, Rawa J. Ameen

Water Tribulation in Baghdad

Dheyaa Wajid Abbood, Rawa J. Ameen

Functional Data Analysis of Salmon Abundance in Rivers Inlet, B.C.

Laurie Ainsworth, Rick Routledge, Jiguo Cao

Efficient Battery Consumption Monitoring for Robot Testing in a First Year Engineering Course

Jaclyn Bowman, Dan Olson, Kate Robinson, Carmen Ciubotariu

Reducing Seabird Bycatch in Alaska Longline Fisheries

Loveday Conquest, Edward Melvin, Kim Dietrich

Canadian Agri-Environmental Indicators for Nitrogen: Residual Soil Nitrogen and the Risk of Water Contamination by Nitrogen

Reinder De Jong, Jingyi Yang, Craig Drury, Valerie Kirkwood

Bayesian Empirical Orthogonal Function and Its Application

Jim Zidek, Nhu Le, Yiping Dou

Comparing Air Quality in Italy, Germany and Poland using BC Indexes

M. Cameletti, A. Fassó, O. Bodnar, W. Schmid

Parametric and Nonparametric Regression Time Series Models for Total Ozone Data

Marie Forbelska, Jan Kolacek, Ivana Horova, Ladislav Budik, Pavel Prosek, Kamil Laska

Bayesian Updating of Non-Gaussian Atmospheric Dispersion Models

A. S. Gargoum, M. Y. El-Bassiouni

Testing the Covariance Structure of Multivariate Random Fields

Bo Li, Marc Genton, Michael Sherman

An International Comparison of Water Quality Standards

Eric Guttorp, Bedii Altug, Kiel Rasp, Ryan Yougman, Peter Guttorp

Kriging for a Thermal Microclimate Network in the Okanagan Valley

Zuzana Hrdlickova, Paramjit Gill, Sylvia Esterby, Howard Thistlewood, Denise Neilsen, Scott Smith

Declining Vulnerability of Central-European Population to Heat Stress? Evaluation of Temporal Changes in Impacts of Hot Summer Periods on Mortality

Jan Kysely, Bohumir Kriz

Spatio-Temporal Models for Fire Frequency and Severity from Panel Data

Hong Li, Steve Taylor, Farouk Nathoo

Fitting Random Walk Models to Motion Data with Measurement Error

Curtis Miller, Mary Christman

Bayesian Spatial-Temporal Modelling of Multiple Pollutants

Chritos Papamichael, Gavin Shaddick

Species-Area Relationships Determined by Dispersal and Habitat Heterogeneity

Guochun Shen, Mingjiang Yu

High Resolution Modelling of Large-Scale Spatial Datasets using Bayesian Spatial Models with Penalised Splines

Haojie Yan, Gavin Shaddick