

Programme at glance

Coffee breaks: all coffee breaks to take place at the Faraday Foyer

	DAY 1 Tuesday 1 st July	DAY 2 Wednesday 2 nd July		DAY 3 Thursday 3 rd July	
8:00 - 9:00	Registration (Faraday Foyer)				
8:30 - 9:00	Morning Coffee	Morning Coffee		Morning Coffee	
9:00 - 9:10	Opening Session (Cavendish LT)	Keynote session (Cavendish LT)		Keynote session (Cavendish LT)	
9:10 - 9:50	Keynote Session (Cavendish LT)	Coffee break		Coffee break	
9:50 - 10:00					
10:00 - 10:20	Coffee break				
10:20 - 10:30		Invited Session IS21 (Cavendish LT)	Contributed Session CS21 (Frankland LT)	Invited Session IS31 (Cavendish LT)	Contributed Session CS41 (Frankland LT)
10:30 - 11:20	Invited Sessions IS11 (Cavendish LT) IS12 (Frankland LT)				
11:20 - 12:00					
12:00 - 12:20		Lunch & Networking (Library Space)		Lunch & Networking (County South LT)	
12:20 - 13:20	Lunch & Networking (Library Space)				
13:20 - 14:20	Contributed Sessions CS11 (Cavendish LT) CS12 (Frankland LT) CS13 (Cavendish CR)	Contributed Sessions CS31 (Cavendish LT) CS32 (Frankland LT) CS33 (Cavendish CR)		Contributed Sessions CS51 (Cavendish LT) CS52 (Frankland LT)	
14:20 - 14:30		Photo & Coffee break		Keynote session (Cavendish LT)	
14:30 - 14:40					
14:40 - 15:00	Coffee break				
15:00 - 15:15		Panel Discussion (Cavendish LT)		Awards, Closing (Cavendish LT)	
15:15 - 16:00	Flash poster presentations			Cakes and Coffee (County South LT)	
16:00 - 16:30		TIES AGM (Cavendish LT)			
16:30 - 17:30	Poster Session & Canapes (Library Space)				
18:00 -		Conference Dinner (County South LT)			

DAY 1 - Tuesday 1st July

8:30 – 9:00 Morning Coffee (Faraday Foyer)

9:00 - 9:10 Opening Session (Cavendish Lecture Theatre)

9:10 - 10:00 Keynote 1 (Cavendish Lecture Theatre)

Statistical Methods for Assessing Water Health in England

Dr Eleanor D'Arcy, Environment Agency

Chair: Dr Emma Eastoe

10:00 - 10:30 Coffee Break (Faraday Foyer)

10:30 - 12:00 Invited Sessions

IS11 - (Cavendish Lecture Theatre)

IS11 - *Challenges in modelling environmental data*

Organiser: Emiko Dupont

Chair: Hannah Worthington

Demystifying spatial confounding. Emiko Dupont, University of Bath

Challenges of modelling presence-only data: developing methods to predict the distribution of European mammals, and their application in Wildlife Management. Simon Croft, Daniel Warren, Animal and Plant Health Agency.

A Bayesian approach for species distribution modelling of plants with presence only data. Kabiru Abubakari, Queen Mary University of London.

IS12 - (Frankland Lecture Theatre)

IS12 - *Design and Assessment Issues in Environmental and Ecological Studies*

Organisers: Mark Kaiser, Abdel H. El-Shaarawi

Chair: Sylvia Esterby

Grasshopper Sparrow Breeding Status: Adaptive selection of neighborhoods in a binary Markov random field. Mark S. Kaiser, Department of Statistics, Iowa State University. Co-authors: Eva Biswas, Andee Kaplan and Daniel J. Nordman

Poisson Models for Assessing the Impact of Electromagnetic Fields on Earth Worms. Abdel H. El-Shaarawi, National Water Research Institute (retired)

Modelling the Non-Negative Integer-Valued Time Series of Pseudo-nitzschia spp. Counts in Cascais Bay: A Comparison of Zero-Inflated Generalised Poisson and Zero-Inflated Negative Binomial Regression Models Helena Mouriño, Faculdade de Ciências, Universidade de Lisboa

12:00 - 13:20 Lunch and Networking (Library Space)

13:20 - 14:40 Contributed Sessions

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CS11 - (Cavendish Lecture Theatre)

Chair: Israel Martinez

Modeling spatial dependence through latent Gaussian models with spatial copulas. Brynjólfur Gauti Guðrúnar Jónsson, University of Iceland

A clustering framework for conditional extremes models. Patrick O'Toole, University of Bath. Co-authors: Christian Rohrbeck, Jordan Richards

Modeling Nonstationary Extremal Dependence via Deep Spatial Deformations. Xuanjie Shao, KAUST. Co-authors: Jordan Richards, Raphael Huser

Approximate Bayesian inference for analysis of spatiotemporal flood frequency data. Birgir Hrafnkelsson, University of Iceland. Co-authors: Árni V. Jóhannesson, Stefan Siebert, Raphaël Huser, Haakon Bakka

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CS12 - (Frankland Lecture Theatre)

Chair: Ruth O'Donnell

Invisible Years Before Breeding: How Prey Dynamics and Population Pressure Influence Natal Dispersal in Tawny Owls. Seyngyeon Lee, University of Aberdeen. Coauthors: Xavier Lambin, Deon Roos, Chris Sutherland, Paul Caplat

A Bayesian approach to species distribution modeling with Presence-only data. Kabiru Abubakari, Queen Mary University of London. Co-authors: Silvia Liverani, Andrew Leitch and Ilia Leitch

Statistical inference for velocity-jump models in movement ecology. Paul Blackwell, University of Sheffield

Comparing ecosystem models using dynamic distances. Matthew Spencer, School of Environmental Sciences, University of Liverpool. Co-authors: Ned Wontner

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CS13 - (Cavendish Colloquium Room)

Chair: Carolina Euan

Statistical Analysis of Ocean Turbulence. Max Coten, University of Western Australia. Co-authors: Lachlan Astfalck

Leveraging massive opportunistically collected datasets to study species communities in space and time. Maxime Fajgenblat, KU Leuven / UHasselt. Co-authors: Robby Wijns, Geert De Knijf, Robby Stoks, Pieter Lemmens, Marc Herremans, Pieter Vanormelingen, Luc De Meester & Thomas Neyens

Incorporating Crowdsourced Data to Improve Wind Speed Modelling. Eamonn Organ, University of Limerick. Co-authors: James Sweeney

Bayesian analysis of weighted regression models for spatiotemporal data and its application to PM2.5 mapping using satellite-derived data. Yovna Jungle, Department of Statistical Sciences, University of Toronto. Co-authors: Meredith Franklin, Vianey Leos Barajas

14:40 - 15:00 Coffee Break (Faraday Foyer)

15:00 - 16:00 Flash Poster Presentations (Cavendish Lecture Theatre)

Followed by very short advert for TIES mentoring scheme

Chair: Marta Shocket

16:00 - 17:30 Poster Session and Canapes (Library Space)

CP01. Statistical Approaches for Modelling Multiple Heavy Metal Pollutants in River Water-Quality Data. Iain Bell, University of Glasgow.

CP02. Introducing the UK Network for Agricultural, Biological and Environmental Statistics. Eleanor D'Arcy, Environment Agency. Co-authors: Hayley Carr, Harriet Low, Fiona Underwood. All authors contributed to this poster on behalf of NABES of NABES.

CP03. Predicting the likelihood of land around ditches being drained: an Icelandic case study. Gylfi Snær Sigurðsson, University of Iceland. Co-authors: Birgir Hrafnkelsson, Jón Guðmundsson

CP04. Comparison of methods to calculate the LCL of the mean and 95th percentile for water quality parameters. Jillian Delaney, Environmental Protection Agency, Ireland.

CP05. Mathematical Modeling of Covid-19 Dynamics in a West African Context. Christabel Emaeyak James, University of Glasgow. Co-authors: Jason Matthiopoulos & Daniel Haydon

CP06. Ecosystem processes driving deer space-use and Lyme disease hazard in urban greenspaces. Sara Gandy, University of Glasgow. Co-authors: Grace Plahe, Jessica Hall, Dave Johnson, Richard Birtles, Lucy Gilbert

CP07. Sub-daily rainfall simulation using multifractal canonical disaggregation: a parsimonious calibration strategy based on intensity-duration-frequency curves. Francesco Cappelli, Università degli Studi della Tuscia. Co-authors: Elena Volpi, Andreas Langousis, Roberto Deidda, Anastasios Perdios, Pierluigi Furcolo, Salvatore Grimaldi

CP08. Statistical estimation of probable maximum precipitation (PMP). Anne Martin, Polytechnique Montréal. Co-authors: Jonathan Jalbert, Élyse Fournier

CP09. Is an image still worth 1000 words in the era of AI? A comparison of Human and AI responses in urban environmental image analyses. Luigi Cao Pinna, University of Glasgow. Co-authors: Claire Miller, Marian Scott, Cris Hasan

CP10. *A Data Science Toolbox for ecological and environmental statistics.* Susan Jarvis, UK Centre for Ecology & Hydrology. Co-authors: Michael Hollaway, Jeremy Carter

CP11. *State of the art in data fusion approaches for environmental data.* Craig Wilkie, University of Glasgow. Co-authors: Claire Miller, Marian Scott, Surajit Ray, Daniela Castro-Camilo, Daniela Cuba, Stephen Jun Villejo, Pietro Colombo

CP12. *Spatio-temporal modelling of bumblebee populations with INLA and inlabru.* Cam Milliken, University of Kent. Co-authors: Eleni Matechou, Christos Efstratiou, Richard Comont

CP13. *Performance of Open Data versus Classical Meta-Analysis - a simulation study.* Danijela Žanko, Institut Ruđer Bišković. Co-authors: Antica Čulina, Azra Tafro, Sunčana Geček

CP14. *Rural education at a threat: assessing the causes for public rural schools closures in the Brazilian Amazon.* Hilder André Bezerra Farias, Universidade Federal do Pará. Co-authors: Luke Parry, Leonardo de Sousa Miranda

DAY 2 - Wednesday 2nd July

8:30 – 9:00 Morning Coffee (Faraday Foyer)

9:00 - 9:50 Keynote 2 (Cavendish Lecture Theatre)

People and birds: Analytical methods for citizen science biodiversity data

Dr Alison Johnston, director of CREEM (University of St Andrews)

Chair: Rachel McCrea

9:50 - 10:20 Coffee Break (Faraday Foyer)

10:20 - 12:00

Invited Session IS21 - (Cavendish Lecture Theatre)

IS21 - *Statistical methods in trait-based ecology: using organism traits to predict ecological outcomes*

Organiser: Marta Shocket

Chair: Ruth O'Donnell

Novel methods to extract trait measurements from spider webs and model foraging strategies.

Francis Windram, Imperial College London

Image-based trait and demographic analysis for mechanistic modelling of invasive species. Erola Fenollosa, Oxford University

Testing mathematical methods for predicting trait values in fluctuating environments. Marta Shocket, Lancaster University

Harnessing species-level animal behavioural traits - the fuzzy issue of plasticity and intraspecific variation. Sally Keith, Lancaster University

10:20 - 11:20

Contributed Session CS21 - (Frankland Lecture Theatre)

Chair: Carolina Euan

A novel statistical approach for designing representative NCEA river flow and temperature monitoring networks. Cameron Bullen, APEM Ltd. Co-authors: Alex Lumsdon, Mike Summers, Eleanor D'Arcy, Brittany Heap, Alberto Scotti, Andrew Davey

Marine Environmental Monitoring. Jon Barry, Cefas

Understanding diffuse environmental effects on hydrology. Thomas Cornulier, BioSS - Biomathematics & Statistics Scotland. Co-authors: Dave L. Miller, Zhou Fang

12:00 - 13:20 Lunch and Networking (Library Space)

13:20 - 14:40 Contributed Sessions

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CS31 - (Cavendish Lecture Theatre)

Chair: Amanda Lenzi

Producing robust abundance trends using sparse long-term citizen-science data. James Clarke, British Trust for Ornithology. Co-authors: Philipp Boersch-Supan, Nina O'Hanlon, Niall Burton, Sarah Harris, Dawn Balmer

Estimating camera malfunction times from detection histories. Milly Jones, University of Kent. Co-authors: Eleni Matechou, Diana Cole, Nicolas Deere

The statistical challenges in tackling persistent climate model uncertainty through model-observation comparisons. Jill Johnson, School of Mathematical and Physical Sciences, University of Sheffield. Co-authors: Jonathan Owen, Iain Webb, Jeremy Oakley (MPS, University of Sheffield); Leighton Regayre, Kunal Ghosh, Lea Prevost, Ken Carslaw (ICAS, University of Leeds)

Bayesian Emulation and History Matching to Constrain Aerosol Radiative Forcing Uncertainty. Jonathan Owen, School of Mathematical and Physical Sciences, University of Sheffield. Co-authors: Jill Johnson, Iain Webb, Jeremy Oakley, Leighton Regayre, Kunal Ghosh, Lea Prevost, Ken Carslaw

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CS32 - (Frankland Lecture Theatre)

Chair: Rachel McCrea

Causal discovery in ecology. Rebecca Supple, Centre for Research into Ecological & Environmental Modelling, University of St Andrews. Co-authors: Hannah Worthington, Ben Swallow

Multispecies sites occupancy modeling with replicate to analyze eDNA data. Marwah Soliman, NTNU, Trondheim, Norway. Co-authors: Robert Brian O'Hara, Bert van der Veen, Glenn John Dunshea

A parametric model to explain isotopic richness. Alcaraz Angelo, LMBA, Université Bretagne Sub (UBS), Vannes. Co-authors: Durrieu Gilles, Poterie Audrey

Distributed lag non-linear models with Laplacian-P-splines for analysis of spatially structured time series. Sara Rutten, Hasselt University. Co-authors: Bryan Sumalinab, Oswaldo Gressani, Thomas Neyens, Elisa Duarte, Niel Hens, Christel Faes

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CS33 - (Cavendish Colloquium Room)

Chair: Susan Simmons

Modelling dynamics in soil moisture time series with an extended Bayesian changepoint detection algorithm. Mengyi Gong, Lancaster University. Co-authors: Prof Rebecca Killick, Prof Christopher Nemeth

A Generalized Cross Entropy Model for soil biological quality. Anna Simonetto, Università degli Studi di Brescia. Co-authors: Gianni Gilioli, Isabella Ghiglieno, Marco Sandri, Maurizio Carpita, Enrico Ciavolino, Mario Angelelli

Modelling topsoil organic carbon declines under ash dieback using a Bayesian beta mixture modelling approach. Fiona Seaton, UK Centre for Ecology & Hydrology. Co-authors: David Robinson, Claire Wood, Clare Benskin, Rebecca Rowe, Karen Hornigold, Keith Kirby, Chris Nichols, Simon Smart

Understanding tree water usage and stress via sap flux density and dendrometer time series. Rebecca Killick, Lancaster University. Co-authors: Mengyi Gong, Andrew Hirons

14:40 - 14:50 Photo (Location TBA)

14:50 – 15:15 Coffee Break (Faraday Foyer)

15:15 - 16:30 Panel Discussion (Cavendish Lecture Theatre)

CLIMATE CHANGE AND DISASTER-RELATED STATISTICS

Chair: Daniela Castro-Camilo

PANEL DISCUSSANTS

- Gemma Cremen, Lecturer of Risk and Resilience Engineering within the Department of Civil, Environmental and Geomatic Engineering at UCL.
- Jon Tawn, Distinguished Professor of Statistics at Lancaster University.
- Amanda Penistone, Head of International Climate Finance Analysis at the UK Department for Energy Security and Net Zero (DESNZ).
- Clair Barnes, Research Associate at the Grantham Institute, Imperial College London
- Mark Naylor, Reader in Computational Geoscience and Hazard Research at the University of Edinburgh's School of GeoSciences

16:30 - 17:30 TIES AGM (Cavendish Lecture Theatre)

18:00 Conference Dinner (County South LT)

DAY 3 - Thursday 3rd July

8:30 – 9:00 Morning Coffee (Faraday Foyer)

9:00 - 9:50 Keynote 3 (Cavendish Lecture Theatre)

Flexible Spatial Modelling with inlabru: From Data to Ecological Inference

Dr Jafet Belmont Osuna, University of Glasgow

Chair: Daniela Castro-Camilo

9:50 - 10:20 Coffee Break (Faraday Foyer)

10:20 - 12:20

Invited Session IS31 - (Cavendish Lecture Theatre)

IS31 - Real world challenge inspiring the next generation of environmental and ecological statistics researchers

Organiser and Chair: Rachel McCrea

Statistical modelling of sea surface temperatures and marine heatwaves. Kajal Dodhia, Lancaster University

Statistical modelling of earthquake occurrence and extreme magnitudes for seismic risk assessment. Wanchen Yue, Lancaster University

Challenges of survival estimation for populations impacted by disease under conditions of declining data collection rates. Max Howell, Lancaster University

Multivariate extreme value models for environmental science. Kristina Bratkova, Lancaster University.

Extreme value theory for long-term risk assessment of offshore structures. Matt Speers, Lancaster University

10.20 - 11:20

Contributed Session CS41 - (Frankland Lecture Theatre)

Chair: Hannah Worthington

More data lead to worse predictions of seabird population change. Jazz Rhoades, British Trust for Ornithology (BTO). Co-authors: Sophie Bennett (joint first author), Jacob Davies, Elizabeth M. Humphreys, Andrew Upton, Philipp Boersch-Supan

Modelling spatiotemporal trends in Belgian spider communities by temporally disaggregating pitfall trap data through interval-integrated basis functions. Thomas Neyens, Hasselt University & KU Leuven. Co-authors: Maxime Fajgenblat

Spatial-Temporal models for investigating solar potential in Ireland using a range of data sources. Maeve Upton, University of Limerick. Co-authors: Eamonn Organ and James Sweeney

12:20 - 13:20 Lunch and Networking (County South LT)

13:20 - 14:20 Contributed Sessions

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CS51 - (Cavendish Lecture Theatre)

Chair: Emma Eastoe

Discovering the hidden sources of particulate matter. Israel Martinez Hernandez, Lancaster University

Navigating data scarcity and surplus: An analytics framework for national water quality assessment. Ionut Paun, University of Glasgow. Co-authors: Marian Scott, Claire Miller, Ruth O'Donnell, Stephen Thackeray, Don Monteith, Eleanor Mackay, Philip Taylor, Erica Zaya

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CS52 - (Frankland Lecture Theatre)

Chair: Craig Wilkie

Bayesian time-varying autoregressive models for aphid abundance data. John Addy, Biomathematics Statistics Scotland. Co-authors: Dave Miller and Katharine Preedy

On the identifiability of the stochastic state-space models. Julien Gibaud, Institute of Mathematics of Bordeaux, France. Co-authors: Frédéric Barraquand

Efficient dynamic occupancy models for large citizen science datasets. Hannah Worthington, University of St Andrews. Co-authors: Emily Dennis, Butterfly Conservation, Byron Morgan, University of Kent, Takis Besbeas, University of Kent

14:20 - 15:15 Keynote 4 (Cavendish Lecture Theatre)

End-to-end data-driven environmental prediction: from observations to decision-information

Scott Hosking, Alan Turing Institute and British Antarctic Survey

Chair: Prof Claire Miller

15:15 – Award & Closing Session (Cavendish Lecture Theatre)

15:30 – Cakes and Coffee (County South LT)

