

49th Gregynog Statistical Conference Programme

The talks will take place in Seminar Room 1 (2nd Floor, far end).

- Friday
12th April**
- 16.00 *Tea*
- 17.15 Prof Simon French Warwick
Cynefin, Modelling and Statistics
Session 1: The Context of Statistical Inference
- 19.00 *Dinner*
- 20.15 *Workshop – group discussions*
- Saturday
13th April**
- 08.00 *Breakfast*
- 09.30 Prof Simon French Warwick
Cynefin, Modelling and Statistics
Session 2: Exploratory Data Analysis and Problem Formulation
- 11.00 *Coffee*
- 11.30 Prof Alan Hawkes Swansea
Hawkes Processes, Finance and Crime
- 13.00 *Lunch*
- Afternoon free*
- 16.00 *Tea*
- 17.30 Dr Sofia Massa Oxford
Graphical models: an overview and some interesting applications
- 19.00 *Dinner*
- 20.15 Dr Eilir Jones Head of Audiences, BBC Wales
What were you watching last night? How media audiences are estimated.
- Sunday
14th April**
- 08.00 *Breakfast*
- 9.15 Prof Tony O'Hagan Sheffield
Prior distributions and posterior inference when the model is wrong
- 10.45 *Coffee*
- 11.15 Prof Simon French Warwick
Cynefin, Modelling and Statistics
Session 3: Small worlds, States of nature and Scenarios
- 12.30 *Lunch and finish*

Speakers

Prof Simon French
Prof Tony O'Hagan
Dr Sofia Massa
Dr Eilir Jones
Prof Alan Hawkes

Warwick
Sheffield
Oxford
Head of Audiences, BBC Wales
Swansea

Staff

Aberystwyth

John Lane
Alan Jones
Diane Jones

Bangor

Chris Whitaker
Yvonne Sylvestre
Yongzhong Sun
Lu Zou

Open University

Paul Garthwaite

Southampton

Russell Cheng

Swansea

Alan Mayer
Jing Chen
Alan Watkins

Warwick

Jane Hutton
John Copas
Tony Lawrance
Ashley Ford
Anjali Mazumder
John Fenlon

Apostolos Gkatzionis
Catalina Vallejos
Dejan Siraj
Dialid Santiago
Javier Rubio
Helen Ogden
Homesh Sayal
Lorna Barclay
Matija Vidmar
Murray Pollock
Nathaniel Shiers

Students

Maldwyn Francis
Martin Hathaway
Cerys Rand
Lee Garratt

Stephanie Hawkes
Amy Hodgkins
Kirsten Williams

Du Shijia

Panayiota Touloupou
Silvia Calderazzo
Thomas Honnor
Kirsty Hey
Amogh Deshpande
Boryana Kolkovska
Pantelis Samartsidis
Kasia Wolny
Axel Finke
Simone Tiberi

Gregynog Statistical Conference

12th – 14th April 2013

Abstracts

Prof Simon French

Warwick

Cynefin, Modelling and Statistics

Session 1: The Context of Statistical Inference

Cynefin is a framework for thinking about statistical inference, risk and decision analysis, and related topics. The talk will also connect statistical methods and knowledge management.

Session 2: Exploratory Data Analysis and Problem Formulation

This talk will discuss method of exploratory data analysis and 'soft' operational research. It will have a practical focus discussing methods that help the analyst move from a mess of issues through to a model or family of models that may be analysed and thus inform the analyst's client.

Session 3: Small worlds, states of nature and Scenarios

Savage wrote a lot about 'small worlds' and statistics. In this somewhat speculative discussion, I will explore how his thinking on small worlds and states therein relates to current developments in scenario thinking in decision analysis. The discussion will reflect on different forms of uncertainty and how these are addressed in an analysis.

Dr Eilir Jones

Head of Audiences, BBC Wales

What were you watching last night? How media audiences are estimated

The media industry needs accurate measurement of TV and radio consumption in order to ensure that the public are served with programmes that they want to watch and hear, as well as providing ratings on which millions of pounds of advertising airtime are traded each day.

Obtaining good estimates pose a range of competing methodological challenges, with seemingly reasonable expectations often in conflict with each other. The result is a set of measurement systems that are among the most complex in survey research but which yield reported consumption levels that are widely accepted and used, if not always understood.

Some of the practical and methodological challenges in media audience measurement will be illustrated, from the initial sampling through to the final weighting and reporting.

Prof Tony O'Hagan

Sheffield

Prior distributions and posterior inference when the model is wrong

All inferences are conditional on the assumed model, but it is often said that all models are wrong. So what use is an inference that is conditional on an assumption that we know to be false? If I said to you, "Assuming that the moon is made of cheese, there is a 0.6 probability that the Democrats will win the next US presidential election", have I told you anything useful at all?

What does a parameter mean in a model that we know to be wrong? Suppose that I assume a linear regression model, with no particular physical reason for the relationship being exactly linear. Then I know that it will not be exactly linear; the true relationship will be something else. So what is the definition of the slope parameter in this model? Parameters have meaning conditional on the model being true, but what help is that meaning when it is conditional on an assumption that we know to be false?

And if the parameter has no meaning except in a fictional sense, what use are inferences about that parameter? And how can I specify prior information about a parameter that has no meaning in the real world?

One answer is to use nonparametric models which make no assumptions that we know will be false with probability one. But parametric models are often used with the intention to learn about parameters. If a relationship is nearly linear then doesn't the slope parameter say something?

I will discuss these questions using the notion of model discrepancy - defined as the difference between the assumed model and reality. In particular, I will ask whether, by expressing prior information about model discrepancy, we can recover something meaningful.