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TWENTY-THIRD GREGYNOG STATISTICAL CONFERENCE

P R O G R A M M E

FRIDAY	13.00	Lunch
24 April	14.15	Professor Alan Washburn (Naval Postgraduate School, Monterey, USA, and Edinburgh University) A Dynamic Search Game
	15.45	Tea
	16.15	Professor Andrew Harvey (London School of Economics) Multivariate Time Series and Control Groups: An Application to the UK Seat Belt Law
	19.00	Dinner
SATURDAY	08.30	Breakfast
25 April	09.30	Professor Phil Brown (Liverpool University) Prediction Diagnostics for Calibration
	11.00	Coffee
	11.30	Mr Ian Evett (Home Office) Forensic Science and Bayesian Inference
	13.00	Lunch
-----AFTERNOON FREE (Walks, etc)-----		
	16.00	Tea
	17.30	Dr David Banks (Cambridge University) Improving the Bayesian Boot-strap
	19.00	Dinner
SUNDAY	08.30	Breakfast
26 April	09.30	Professor Peter Lewis (Naval Postgraduate School Monterey, USA) A Program for Output Analysis of Multi Factor Simulations
	11.00	Coffee
	11.30	Dr Chris Jones (Bath University) On the Robustness of Shrinkage Prediction in Regression
	13.00	Lunch
	14.15	Professor Richard Lockhart (Simon Fraser University, Canada) Goodness of Fit, Quadratic Forms and Invariance Principles
	15.30	Tea

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 TWENTY-THIRD GREGYNOG STATISTICAL CONFERENCE 1986 - PARTICIPANTS

ABSTRACTS

SPEAKERS

Dr David Banks	(Cambridge University)
Professor Phil Brown	(Liverpool University)
Mr Ian Evett	(Home Office)
Professor Andrew Harvey	(London School of Economics)
Dr Chris Jones	(Bath University)
Professor Peter Lewis	(Naval Postgraduate School, Monterey, USA)
Professor Richard Lockhart	(Simon Fraser University, Canada)
Professor Alan Washburn	(Naval Postgraduate School, Monterey, USA and Edinburgh University)

Professor Peter Lewis      A Program for Output Analysis of Multi Factor  
 (Naval Postgraduate School,      Simulations  
 Monterey, USA)

SUPER SIMTBED is a testbed for organizing and examining the output of multi-factor simulations, particularly when sample size is one of the factors. Graphics, and regression analysis for asymptotic expansions, is provided. Recent additions for estimating percentiles to facilitate simulations involving the power of test statistics are described, as well as an AFTERBURNER for implementing variance reduction schemes. An example involving the estimation of serial correlations and testing for independence is given.

Professor Richard Lockhart      Goodness of Fit, Quadratic Forms and Invariance  
 (Simon Fraser University,      Principles  
 Canada)

Many test statistics for goodness-of-fit problems are quadratic forms in order statistics. Their behaviour can often be analysed approximately by studying quadratic forms in independent exponential variates. An invariance principle for such quadratic forms can provide approximations to the distributions of the test statistics. The work leads to the conclusion that quadratic tests of fit with approximately normal null distributions will be poor tests. The ideas will be developed through an examination of Q-Q plots and spacings statistics.

Dr David Banks      Improving the Bayesian Boot-strap  
 (Cambridge University)

The talk describes a version of the Bayesian bootstrap that assigns random Dirichlet mass uniformly across statistically equivalent blocks. The technique requires an iid sample from a continuous cdf F with known compact support. Under these conditions, the resulting analysis has three advantages over traditional bootstrap competitors. First, it incorporates the properties of the probability integral transformation. Second, it often enables exact analytic expressions for the bootstrap distribution of common statistical functionals. Third, it has shown consistent superiority in a large-scale simulation experiment that compared the global accuracy of confidence intervals for the median, mean, variance and cdf with respect to four underlying beta distributions, each having a distinctly different shape. The simulation experiment uses a goodness-of-fit test as the basis for comparing the performance of competing bootstrap techniques.

ABERYSTWYTH

Staff

Mr P H Jackson  
 Dr J G Basterfield  
 Dr I G Evans  
 Mr D A Jones  
 Dr J A Lane  
 Miss S G Lutkins  
 Dr R J Owen

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Mr N H K Al-Yasiri	Mrs F A E Khalil
Mr B M Assas	Dr A Hussin
Mr A Banda	Mr M C Musongole
Mr P R Ceuppens	Mr A R K Rahi
Mr Z M Chaudhry	
Mr A Jamil	

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BIRMINGHAM

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UMIST

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