

THEORY AND PRACTICE OF EXTREMES

by

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Abstract

Extremes are in the news right now, whether it's concern about the dramatic effect of climate change, or the turbulent state of world economic markets.

This course aims to do two things: first, to give a brief introduction to the theory and models that underpin a statistical treatment of extremes; second, to illustrate, through examples, how such techniques can be applied in practice.

Programme

Lecture 1 Monday, November 17/2008 14.30 – 16.30 Aula Cucconi

Classical theory and models: Motivating Examples, The Classical asymptotic theory of extremes, The Generalized Extreme Value Distribution, Likelihood inference, Simple Applications.

Lecture 2 Tuesday, November 18/2008 11.00 – 13.00 Aula Cucconi

Threshold-based models: Threshold type models, The Generalized Pareto distribution, Point process representations, Threshold selection, Inference and applications.

Lecture 3 Monday, November 24/2008 14.30 – 16.30 Aula Cucconi

Dependent and non-Stationary series: Extremes of stationary processes, the Extremal index, Modelling non-stationary extremes, Examples and applications.

Lecture 4 Tuesday, November 25/2008 11.00 – 13.00 Aula Cucconi

Other topics: Multivariate extremes; Spatial extremes; Bayesian Inference.