UNIVERSITY OF SYDNEY

Statistics Seminar

Friday May 11, 2.00pm., Carslaw Lecture Room 173 (level 1)

Constant versus Changing Self-Similarity Index

Dr Marc Raimondo

School of Mathematics and Statistics
University of Sydney

Abstract

Many experimental data can be modelled using self-similar processes. In such applications, one needs to estimate the self-similar 'index' (or scaling exponent) from the data. Most existing methods for the estimation of the scaling exponent (index) assume that the index is constant. However, it is often the case in real data, for instance in medical, hydrological, geophysical or financial applications, that the self-similarity behaviour changes as the phenomenon evolves. In such a setting, the assumption of a constant scaling exponent may be unrealistic. It is therefore of interest to develop statistical methods to assess the nature of the self-similar process involved in a given phenomenon. In this talk, we will present wavelet-based procedures to estimate and test a time-varying scaling exponent.

M. Quine / S. Peiris, 93513012

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