



Department of Decision Sciences

Statistics Seminar

A novel Bayesian dynamic model for time series network data

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12:30pm Room 3-E4-SR03 Via Röntgen 1 Milano

Abstract

This seminar will show how the dynamic chain graph model can deal with the ever-increasing problems of inference and forecasting when analysing time series observed on networks. The dynamic chain graph model is a new class of Bayesian dynamic models suitable for multivariate time series which exhibit symmetries between subsets of series and a causal drive mechanism between these subsets. This model can accommodate non-linear and non-normal time series and simplifies computation by decomposing a multivariate problem into separate, simpler sub-problems of lower dimensions. The advantages of the new model will be illustrated by forecasting traffic network flows and also by modelling gene expression data from transcriptional networks. A hierarchical extension of the model will also be presented.