Hilary Term 2009

CABDyN SEMINAR SERIES
Saïd Business School, University of Oxford

Convenors:
Felix Reed-Tsochas, *James Martin Institute, Saïd Business School*
Eduardo López, *Saïd Business School*

Our meetings intend to provide a forum for rigorous research (in a broad range of disciplines) focusing on complex adaptive systems, using methods and techniques such as agent-based modelling and complex network analysis. Since potential areas of application for such approaches can be located across the social, natural and engineering sciences, our aim is to involve participants from a wide range of departments in Oxford. We welcome talks which focus on particular areas of application and associated technical issues, but also encourage contributions which address more fundamental conceptual or mathematical problems. The CABDyN Seminar Series is one of the activities of the CABDyN Complexity Centre (http://sbs-xnet.sbs.ox.ac.uk/complexity/).

Tuesday 17th February, 12.30 – 2.00 pm

Seminar Room B, Saïd Business School

Dr Marc Barthelemy

Commissariat à L'Energie Atomique – Département de Physique

'Microdynamics in stationary networks: empirical results and modelling'

ABSTRACT

Many complex systems, including networks, are not static but can display strong fluctuations at various time scales. Characterizing the dynamics in complex networks is thus of the utmost importance in the understanding of these networks and of the dynamical processes taking place on them. In this talk, I will present the example of the US airport network in the time period 1990-2000. I will show that even if the statistical distributions of most indicators are stationary, an intense activity takes place at the local ('microscopic') level, with many disappearing/appearing connections (links) between airports, and a very broad distribution of lifetimes.

In particular, the links which disappear have essentially the same properties as the ones which appear, and links which connect airports with very different traffic are very volatile. In a last part, I will propose a model for dynamical networks, inspired by previous studies on firm growth, and which reproduces most of the empirical observations on the US airport network both for the stationary statistical distributions and for the dynamical properties.

Sandwiches and drinks will be provided

For further information contact info.cabdyn@sbs.ox.ac.uk
Seminar webpage: http://sbs-xnet.sbs.ox.ac.uk/complexity/complexity_seminars.asp