

Michaelmas Term 2008

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 28th October, 12.30 – 2.00 pm

Seminar Room B, Saïd Business School

Dr Tobias Galla

Theoretical Physics Group, The University of Manchester

‘Stability, complexity and diversity in random replicator models of ecology and evolutionary game theory’

ABSTRACT

We will review recent statistical mechanics analyses of random replicator equations. Replicators may here refer to interacting species in simple eco-systems, or in the context of evolutionary game theory describe the repetitive interaction of players in so-called matrix games. We will focus on different stable and unstable regimes of the replicator dynamics, their ergodicity properties, and study the connection between fixed points of the replicator equations and the Nash Equilibria of matrix games. We will also present results on the learning dynamics of agents with finite memory, and demonstrate how irregular and potentially chaotic motion may occur in such systems.

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