

CABDyN / INET Oxford SEMINAR SERIES

Keble College - Hilary 2014

For further information
please contact the
Cabdyn Administrator:

info.cabdyn@sbs.ox.ac.uk

01865 288785

Seminar webpage:
[www.cabdyn.ox.ac.uk/
complexity_seminars.
asp](http://www.cabdyn.ox.ac.uk/complexity_seminars.asp)

Please note: although
the seminar
programme detailed
was correct at time of
printing, seminar
arrangements are
subject to change – for
the latest information,
please check the
seminar webpage.

‘The structural stability of complex ecological systems’

Serguei Saavedra

Postdoctoral Fellow, Integrative Ecology Group – Bascompte Lab,
Estación Biológica de Doñana

Tuesday 11th March 2014, 12.30 -14.00

Roy Griffiths Room (ARCO), Keble College

ABSTRACT:

A prevailing question encountered across the ecological literature is whether given an observed number of species and their interactions, there are ways to organize those interactions that lead to more persistent communities. Conventionally, studies have looked into local stability and used numerical simulations to address this question, however, these studies have found that the network of interspecific interactions have either positive, negative, or no effects.

In this talk, I will introduce a general framework based on the concept of structural stability to explain such a disparity of results. The structural stability of a system corresponds to the set of conditions on the parameters of the system leading to a qualitative behavior. Here, we demonstrate that observed network architectures of ecological systems maximize the range of conditions compatible with the stable coexistence of species. These findings reveal that structural stability may provide a unified, context-independent assessment of the implications of the architectural patterns observed in nature.