



Keble College / University of Oxford



SEMINAR SERIES / Michaelmas 2013

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

'Resilience of natural gas networks during conflicts, crises and disruptions'

Rui Carvalho

Research Fellow

School of Mathematical Sciences, Queen Mary,
University of London

Tuesday 3rd December, 12.30 -14.00
Roy Griffiths Room (ARCO), Keble College

ABSTRACT:

Human conflict, geo-political crises, terrorist attacks, and natural disasters can turn large parts of energy distribution networks off-line, creating unexpected congestion in the remaining infrastructure. Given the importance of the security of natural gas supply, we need models that enable the management of network congestion at the scales of continents, countries and urban areas, especially during crises. Here we introduce a decentralized model of congestion control to explore the effects of removing supply or transit countries from the network, and of supplying Eastern Europe from Norway and the Netherlands during a hypothetical crisis with Russia. The model reproduces the large scale features of gas transport in Europe, and also allows us to predict the spatial pattern of network congestion during a crisis.

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.



Institute for
New Economic Thinking
AT THE OXFORD MARTIN SCHOOL