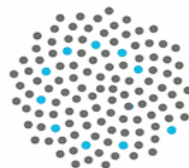


Complex Networks

Phil Pollett

<http://www.maths.uq.edu.au/~pkp>



AUSTRALIAN RESEARCH COUNCIL
Centre of Excellence for Mathematics
and Statistics of Complex Systems



THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

The team

Chief investigators

Kostya Borovkov	UMelb
Richard Brent	ANU
Tony Dooley	UNSW
Gary Froyland	UNSW
Peter Hall	UMelb
David Hill (Captain)	ANU
Phil Pollett (Vice)	UQ
Peter Taylor	UMelb

The team

Research fellows

Christina Burt

UMelb

Paul Leopardi

ANU

Jin Fan

ANU

Judy-anne Osborn

ANU

Jun Zhao

ANU

The team

Research students

Fionnuala Buckley

UQ

Rohan Claffey

UMelb

Sandy Clarke

UMelb

Michelle Dunbar

UNSW

Stephen Howe

UNSW

Paul Keeler

UMelb

Hugh Miller

UMelb

Yacov Salomon

UMelb

Goals

Goal: To develop advanced methods for optimisation, inference, stability and control of complex networks

Illustrative problem: How to scale methods that work for smaller systems to the large network structures that exist in natural systems and modern infrastructure systems

Applications areas: transport, energy systems, teletraffic and ecological networks

Flagship applications: (1) security of large engineering grids, and (2) control of emerging pests, diseases and pathogens

Some current projects

- Discrete-time stochastic metapopulation models (UQ)
- Optimising airline connections when subjected to stochastic delays (UNSW)
- Modelling a mobile ad hoc network (UMelb)
- Models for structured population networks (UQ)
- Scheduling algorithms for port handling and power systems control (ANU)
- Security control for large power networks (ANU)

Preliminary workshop, La Trobe University, 28 September 2007

Forthcoming:

International Workshop on Complex Systems and Networks, ANU, 1-3 October 2008

Special session “Modelling and Control of Metapopulation Networks”, 18th Biennial Congress on Modelling and Simulation (MODSIM09), Cairns Convention Centre, 13-17 July 2009