Modelling and Analysis of Ad-hoc Networks

Future Directions and Challenges

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with Carl P. Dettmann and Orestis Georgiou

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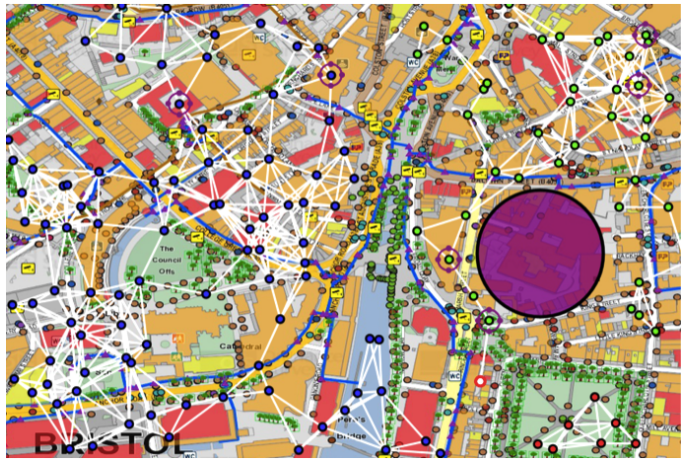
Extending models to system design

- Location dependent power allocation and MCS selection (e.g., using scaling laws)
- Interference-limited networks (more to be done)
  - O. Georgiou et al, "Directional antennas improve the link-connectivity of interference limited ad hoc networks," in PIMRC 2015.
  - O. Georgiou et al, "Location, location, location: border effects in interference limited ad hoc networks," in SPASWIN 2015.
- Cast models in small cell 5G/D2D/Smart City context
  - Resilience
  - Heterogeneous networks
  - UL/DL decoupling
  - Relaying

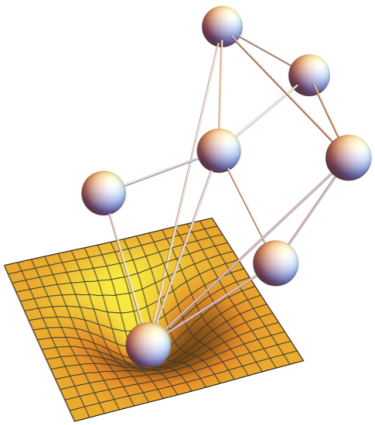


Unlocking new theoretical domains

- Super dense networks and continuum models
- Mobile networks
- Temporal networks
- Trust and security
- Nonuniform / anti-correlative position distributions
- Cognitive networks
- Overlaid social networks

Spatially Embedded Networks

EPSRC funded project



SPATIALLY EMBEDDED NETWORKS

- Continuum models
- Mobility models
- Temporal models
- Trust and security models

http://www.eng.ox.ac.uk/sen/

Aimed at creating new analytical techniques and models for networks **embedded within a bounding geometry**

14th Mathematics of Networks Meeting

Topic: spatially embedded networks

The 14th Mathematics of Networks meeting (MoN14) will be held at the Harris Lecture Theatre, Oriel College, University of Oxford, on **Monday, 21st September 2015**. This meeting will have the theme spatially embedded networks.

- Multidisciplinary event
- 45 minute lectures
- Registration is **free** - deadline: 11th September 2015

http://www.monmeetings.org/meeting14/

Thank you...

Feedback is welcome!