

Toulouse Complex Network (WP2)

(4-day workshop)

Dynamic Networks



Monday June 20, 2016 – Thursday June 23, 2016
INP-ENSEEIH
2 Rue Charles Camichel, 31000 Toulouse, France



**Institut des
Systèmes
Complexes
de Toulouse**

Organizers: A Quirin, M Grossetti, G Theraulaz, F Sedes, B Jouve, R Cazabet, L Beauguitte

<http://www.isc-t.fr>

Aim and Scope:

What are relevant parameters for describing spatio-temporal dynamics on or of networks? How to define a community of individuals in a network and characterize its dynamics? These questions are of great importance for social networks of course but also for other fields of application. Examples come for instance from transportation systems where new dynamic models arise in carpooling systems or in collaborative logistics. Another example is in the field of collective animal behaviour where models reproducing the construction dynamics of the networks provide a way to assess how each of the selected behavioral variables contributes to the emergent collective properties. In the economic domain, many economic markets, such as labor markets, involve outcomes that are determined not just by individual characteristics but also by network characteristics such as the structure of the professional contacts developed by the individuals in question. For human social networks, the way some individuals aggregate to constitute a community obeys rules that depend on the dynamic configuration of personal networks, though not only on this. In the case of biological networks, the characterization of temporal dynamics helps to decipher the evolutionary dynamics of multigenic gene families.

Concerning spatialization, the bulk of spatialized relational data is constantly growing in contemporary societies (referring to economic relations, knowledge networks, various forms of social ties –including “social networks”, material and immaterial flows) and the study of spatial networks is a challenging field. Historians, on their side, are getting more and more interested in the reconstruction of spatial relations (travels, epistolary exchanges, social ties, etc.). When dealing with spatialized data, the issue of visualization of big spatialized networks (*e.g.* networks of scientists, interconnected rural places in Medieval France, global traffic flows) is central and is a way to switch from network graphs to efficient network maps. We shall also address the question of the dynamic building of spatialized networks. We may examine the impact of local changes (in terms of geographical, topological and/or network distances) on global properties of networks, which may give guides for model the organization of networks and even the rules of dynamics.

Registration:

The workshop is open but registration is necessary. To register, please fill in the form available from the website <http://www.isc-t.fr>.

Registration will include lunch and breaks.

Some supports, particularly for PhD students, are available. To apply, please send an Email to jouve@univ-tlse2.fr in which you detail you research and the motivation for support in a half page, and send it before Thursday March 31, 2016.

Program:

	morning	afternoon
20/6/2016	9H00-10H30 : dynamics and complex networks 1 Jean-Pierre Nadal (CAMS, Paris) http://www.lps.ens.fr/~nadal/	14H00-15H30 : complex network and urban systems Thomas Louail (FISC, Palma de Mallorca) https://ifisc.uib-csic.es/people/people-detail.php?id=893
	11H00-12H30 : dynamics and complex networks 2 Michel Grossetti (CNRS, LISST, Toulouse) (description, émergence de dynamique) http://w3.lisst.univ-tlse2.fr/cv/grossetti_michel.htm	16H00-18H00 : short talks by the participants
21/6/2016	9H00-10H30 : dynamic of societies 1 : animal Cedric Sueur (IPHC, Strasbourg) https://sites.google.com/site/cedricsueuranimalbehaveviour/	14H00-15H30 : dynamic brain networks Fabrizio De Vico Fallani (INRIA, Paris) https://sites.google.com/site/fabriziodevicofallani/
	11H00-12H30 : dynamic of societies 2 : human Camille Roth (CNRS, Marc Bloch, Berlin) http://camille.roth.free.fr/	16H00-18H00 : applications: business use cases session
22/6/2016	9H00-10H30 : generic models 1 Remy Cazabet (IXXI, Lyon) http://www.cazabetremy.fr/	14H00-15H30 : logistique/trafic ? Eric Ballot (Mine Paris Tech) http://cgs-mines-paristech.fr/equipe/eric-ballot/
	11H00-12H30 : generic models 2 Samuel Martin (CRAN, Lorraine) http://w3.cran.univ-lorraine.fr/perso/samuel.martin/index.php	16H00-18H00 : short talks by the participants
23/6/2016	9H00-10H30 : dynamic data 1 Marie-Pierre Bès (LISST, Toulouse) http://personnel.isae.fr/marie-pierre-bes/ Béatrice Milard (LISST, Toulouse) http://w3.lisst.univ-tlse2.fr/cv/milard.htm	
	11H00-12H30 : dynamic data 2 Matthieu Latapy (LIP6, Paris) http://latapy.complexnetworks.fr	