Title: Gossip and Knowledge

Speaker: Hans van Ditmarsch (CNRS & LORIA, Nancy)

Venue: KD102 (Kadim Diwan Building)

Date: 8 May 2018

Time: 4PM

Abstract:

A well-studied phenomenon in network theory since the 1970s are optimal schedules to distribute information by one-to-one communication between nodes. One can take these communicative actions to be telephone calls, and protocols to spread information this way are known as gossip protocols or epidemic protocols. Statistical approaches to gossip have taken a large flight since then. It is typical to assume a global scheduler who executes a possibly non-deterministic or randomized protocol. A departure from this methodology is to investigate distributed epistemic gossip protocols, where an agent (node) will call another agent not because it is so instructed by a scheduler, or at random, but based on its knowledge or ignorance of the distribution of secrets over the network and of other agents' knowledge or ignorance of that. One such protocol requires that an agent may only call another agent if it does not know the other agent's secret. The expected termination of such protocols may di ffer from that of non-epistemic or of globally scheduled protocols. We present a survey of recent results.

About the speaker:

Hans van Ditmarsch is a senior researcher at CNRS (the French National Research Organization), and based at LORIA in Nancy, where he is heading the research team CELLO (Computational Epistemic Logic in LOrraine). He is also affiliated to IMSc (Institute for Mathematical Sciences), in Chennai. His research is on the dynamics of knowledge and belief, information-based security protocols, modal logics, and combinatorics. He was the recipient of an ERC (European Research Council) starting grant Epistemic Protocol Synthesis, and he has been an editor of the Journal of Philosophical Logic. He is an author of the textbook and monograph Dynamic Epistemic Logic, an editor of the Handbook of Epistemic Logic, and an author of the logic puzzles book One Hundred Prisoners and a Light Bulb. From January to June 2018 he is working at ReLaX (Research Lab in Computer Science), Indo-French Research Unit, CNRS UMI 2000, in Chennai.