Title: Emergence and Complexity in Complex Networks
Director: Dr. Àlex Arenas Moreno
Co-director: Dr. Robert Rallo Moya
Research group: Algorithms Embedded in Physical Systems and Transport Phenomena research team
Masters: MIA
Description:
Emergence is the way complex systems and patterns arise out of a multiplicity of simple and local interactions between individuals (i.e. nodes, computers, particles, atoms, molecules, cells, neurons, tissues, humans, animals, economical agents,...). Complexity can be understood as the measure of order of the individuals constituents of a system.

The goal of this research project is to know how emergence and complexity is regulated by its underlying complex network properties.

The motivation of this work lays on the fact that emergence and complexity are present in many real world phenomena from the non-living physical systems to living biological systems. Furthermore, emergence (bottom-up effects) and immergence (top-down effects) play a key role in internet, weather prediction, economy, biology, establishment of cities, language,...

The working plan is the following:
1. Introduction to the problem: study of the related bibliography about emergence, complexity, complex networks, cellular automaton and game of life.
2. Simulation of well known computational emergent phenomena (i.e. cellular automaton, game of life) in synthetic complex networks.
3. Analysis of the results

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