Abstracts:

In the first talk, we will study how we can transfer the human notion of trust diffusion to ad hoc networks. We also propose and evaluate a distributed protocol to manage trust diffusion in this kind of networks. In this protocol, each node i maintains a “trust value” about an other node j which is computed both as a result of the exchanges with node j itself and as a function of the opinion that other nodes have about j. These two aspects are respectively weighted by a trust index that measures the trust quality the node has in its own experiences and by a trust index representing the trust the node has in the opinions of the other nodes. Simulations have been realized to validate the robustness of this protocol against different kinds of attacks: simple attacks, coalition attacks, Trojan attacks and detonator attacks.

In the second talk, we will give indications about the dynamical impact coming from the main sources of perturbation in biological regulatory networks. First we define the boundary of the interaction graph expressing the regulations between the main elements of the network (genes, proteins...). Then we search what changes in the state values on the boundary could cause some changes of states in the core of the system (robustness to boundary conditions). After we analyse the role of the mode of updating (sequential, block sequential or parallel) on the asymptotics of the network, essentially on the occurrence of limit cycles (robustness to updating methods). Finally we show the influence of some topological changes (e.g. suppression or addition of interactions) on the dynamical behavior of the system (robustness to topology perturbations).