Dynamical strategic influence in a social network.

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We consider a dynamical model of influence with a set of non-strategic agents and two strategic agents. The non-strategic agents are organized in a network along which they communicate. The strategic agents have two opposite opinions 0 and 1. At each stage, the opinion of the non-strategic agents changes depending on the opinion of their neighbors at the previous stage and of the strategic agents (depending on who the strategic agent decides to use their influence on).

This type of model inspired by the model of opinion diffusion of De Groot [2] has been studied by several authors for example Acemoglu et al. [1] or Grabisch et al. [3]. In this last paper the authors focus on a static model: at the outset of the game each strategic agent chooses a non-strategic agent to influence and can not change anymore afterwards. We provide here an extension of their model where the strategic agents can change who they try to influence at every stage.

We model this problem by a stochastic game. In this dynamic setting, the right generalization of previous concepts of solution is the notion of uniform value. We prove it existence when the network is connected.

Références

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