

Spreading models on moving agents

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Abstract

In this work we investigate different spreading models on dynamic topologies of agents. Agents of the system take place on a regular square lattice and they are moving as time passes. It was shown previously [1] that varying the speed of the agents results in topological changes if we examine the system in discrete time steps. Namely for low speed the network of agents stays close to regular lattices. Increasing the speed (the distance the agents jump in each time-step) brings the topology to small-world, while in some cases even scale-free like topologies can be seen. In our work we use SI model variants [2] to test if there is any difference between spreading processes on static topologies and the same processes on dynamic topologies introduced above.

Keywords: spreading, agent-based models, SI model, topologies

MSC: 68

References

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- [2] M. E. J. NEWMAN, *Networks - An introduction*, University of Michigan and Santa Fe Institute, pp. 627-675, Oxford University Press (2010).