Virtual network as excitable medium

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We simulate the spread of an activity in a virtual group.

Dissemination of ideas and opinions in virtual networks, *e.g.*, in social networks, the Internet, academic networks, the blogosphere, etc. is of special interest. The researchers utilize different models to simulate the dissemination of information in networks. We perform simulations using the model of excitable medium [1] and the epidemic models [2]. We suppose that the structure of the virtual group corresponds to a scale free network [3].

Moreover, to simulate the spread of certain ideas in a professional virtual group, we considered the propagation of excitation in an inhomogeneous excitable medium of high connectivity [4]. We assumed that the network elements form a complete graph. Parameters of the elements are normally distributed. The simulation showed that interest in the idea can fade or fluctuate depending on the settings in the virtual group. The presence of a permanent excited element with relatively high activity leads to chaos, *i.e.* the fraction of members of the community actively interested in an idea varies irregularly.

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