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## Presentation "Public opinion dynamics in the active voter model"

*Tuesday 21 May 2024 16:30 (30 minutes)*

Abstract: "The aim of the research was to propose a model of social interactions that could explain the characteristic dynamics of election polling. In democratic societies, strong polarization of public opinion is often observed along with tight outcomes of elections. The presented model is based on the classical Ising model, where evolving in time, asymmetric weights of interactions in the social network were introduced. The dynamics of these weights are coupled to the results of polling. In the following research, the dependence of the system's parameters on its dynamics was presented. In contrast to the ferromagnetic phase typical in the Ising model, the analysis identifies a clustering phase marked by a phase transition associated with a discontinuity in the system's energy. Within the clustering phase, the system splits into two regions with distinct states. The system's dynamics can be partially described by analyzing instabilities along the interface of phases using mean-field analysis. The research aims to establish a connection between the clustering phase and the polarization of public opinion in democratic societies. The discussion of the results includes their applications in the field of social physics and their correspondence with real-life polling data."

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