

Abstract Submitted  
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**Voter dynamics on an adaptive network with finite average connectivity**<sup>1</sup> ABHISHEK MUKHOPADHYAY, BEATE SCHMITTMANN, Physics Department, Virginia Tech — We study a simple model for voter dynamics in a two-party system. The opinion formation process is implemented in a random network of agents in which interactions are not restricted by geographical distance. In addition, we incorporate the rapidly changing nature of the interpersonal relations in the model. At each time step, agents can update their relationships, so that there is no history dependence in the model. This update is determined by their own opinion, and by their preference to make connections with individuals sharing the same opinion and with opponents. Using simulations and analytic arguments, we determine the final steady states and the relaxation into these states for different system sizes. In contrast to earlier studies, the average connectivity (“degree”) of each agent is constant here, independent of the system size. This has significant consequences for the long-time behavior of the model.

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