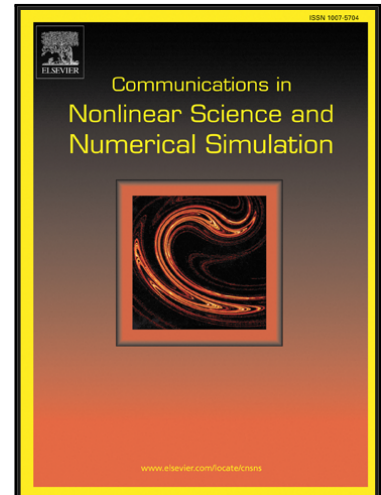


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Yunpeng Xiao, Chenguang Song, Yanbing Liu

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# Social Hotspot Propagation Dynamics Model Based on Multidimensional Attributes and Evolutionary Games

Yunpeng Xiao\*, Chenguang Song, Yanbing Liu

*Chongqing Engineering Laboratory of Internet and Information Security, Chongqing University of Posts and Telecommunications, Chongqing 400065, PR China*

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## Abstract

In the field of complex social network hotspot analysis, mining the dynamic factors behind information propagation is a focus of current research. In this paper, user multidimensional attributes and evolutionary games are combined with the traditional susceptible-infected-recovered (SIR) epidemic model, which is used to quantify the impact of external and internal driving factors on group state transitions during hotspot propagation. First, the network structure attributes and historical attributes of social users are extracted, and user multidimensional attribute driven mechanism is constructed by multivariate linear regression. This is used to analyze the internal driving factors that affect users participating in hotspots. Second, taking into account multi-source information dissemination and the complexity of user interaction behaviors, the concept, perceived popularity, is defined, and the dynamic evolution strategy of user behaviors based on evolutionary game theory is proposed. This reveals that external driving factors affect the behaviors of social network users. Finally, considering the external and internal driving factors that affect hot topic information dissemination, we obtain the hotspot propagation model based on user multidimensional attributes and evolutionary games, combined with the traditional SIR epidemic model. Experiments show that the model can effectively reveal the impact of different driving factors on information dissemination, and

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\*Corresponding author  
Email address: xiaoyp@cqupt.edu.cn (Yunpeng Xiao)

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