

Abstract Submitted  
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**Influence and structural balance in social networks** P. SINGH, S. SREENIVASAN, B. SZYMANSKI, G. KORNISS, RPI — Models on structural balance have been studied in the past with links being categorized as friendly or antagonistic [Ref- T. Antal et al., Phys. Rev. E 72, 036121 (2005)]. However no connection between the nature of the links and states of the nodes they connect has been made. We introduce a model which combines the dynamics of the structural balance with spread of social influence. In this model, every node is in one of the three possible states (e.g. leftist, centrist and rightist) [Ref- F. Vazquez, S. Redner, J. Phys A, 37 (2004) 8479-8494] where links between leftists and rightists are antagonistic while all other links are friendly. The evolution of the system is governed by the rules of structural balance and opinion spread takes place as a result of structural balance process. The dynamics can lead the system to a number of fixed points (absorbing states). We study how the initial density of centrists  $n_c$  affects the dynamics and probabilities of ending up in different absorbing states. We also study the scaling behavior of the expected time to converge to one of the absorbing states as a function of the initial density of centrists and under some variations of our basic model.

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