

# MODELING AND ANALYSIS OF COMMUNITIES IN SOCIAL NETWORKS

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ABSTRACT. Communities play an important role in social networks. In fact, it seems that communities are necessary/essential for a social network to work efficiently. However while there exists a large body of work that formally models and studies macroscopic properties of social networks such as the degree distribution and diameter, very little work is available on mathematical models for microscopic properties of communities in social networks. In this talk we will discuss such a model that is simple enough to allow a formal analysis, yet be expressive enough to provide insights into important microscopic properties of communities in social networks.

An interesting outcome of the analysis of the proposed model is that it suggests an intriguing connection between content filtering, influence, reputation, and identity in information communities. It is commonly believed that these concepts play an important role in information communities; however there is very little work available that explains why this is the case. While the analysis of the connection between content filtering, influence, reputation, and identity in an information community, presented in this paper is still preliminary, we believe that the proposed model can be used to formally study these concepts.

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*Date:* March 26, 2017.