

Abstract Submitted  
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**A simple model for studying interacting networks**<sup>1</sup> WENJIA LIU, SHIVAKUMAR JOLAD, BEATE SCHMITTMANN, R.K.P. ZIA, Virginia Tech — The characteristics of single networks, whether physical, biological or social, are well known. However, many of these networks function not only in isolation, but also coupled to each other. So far, little is known about such “interacting networks.” Here, we consider two coupled systems, modeling social networks with a preferred number of friends. We first report on the (statistical) properties of the stationary state of a single network, which consists of a fixed set of nodes and a stochastically varying set of links (generated according to a preferred degree,  $\kappa$ ). Next, we investigate the effects of coupling two such networks (with different  $\kappa$ s) by various means. Findings using both analytic and simulation techniques will be presented and potential consequences for real networks will be discussed.

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