Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Asymptotically inspired moment-closure approximation for adaptive networks MAXIM SHKARAYEV, Iowa State University — Dynamics of adaptive social networks, in which nodes and network structure co-evolve, are often described using a mean-field system of equations for the density of node and link types. These equations constitute an open system due to dependence on higher order topological structures. We propose a systematic approach to moment closure approximation based on the analytical description of the system in an asymptotic regime. We apply the proposed approach to two examples of adaptive networks: recruitment to a cause model and adaptive epidemic model. We show a good agreement between the mean-field prediction and simulations of the full network system.

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Date submitted: 09 Nov 2012 Electronic form version 1.4