

Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Dynamics of rumor-like information dissemination in complex networks MAZIAR NEKOVEE, BT Research, British Telecom, Martlesham, UK, YAMIR MORENO, Department of Theoretical Physics, Faculty of Science, University of Zaragoza, Zaragoza, Spain, GINESTRA BIANCONI, MATTEO MARSILI, The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, COMPLEXITY GROUP TEAM, BIFI TEAM, CONDENSED MATTER THEORY TEAM — An important dynamic process that takes place in complex networks is the spreading of information via rumor-like mechanisms. In addition to their relevance to propagation of rumors and fads in human society, such mechanisms are also the basis of an important class of collective communication protocols in complex computer networks, such as the Internet and the peer-to-peer systems. In this talk we present results of our analytical, numerical and large-scale Monte Carlo simulation studies of this process on several classes of complex networks, including random graphs, scale-free networks, and random and small-world topological graphs. Our studies point out to important differences between the dynamics of rumor spreading and that of virus spreading in such networks, and provide new insights into the complex interplay between the spreading phenomena and network topology.

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Date submitted: 14 Dec 2004

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