

MAR14-2013-001214

Abstract for an Invited Paper
for the MAR14 Meeting of
the American Physical Society

Epidemics, networks, and percolation

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Diseases spread over networks of physical contact between individuals, and the structure of these networks, along with the biological properties of diseases, dictate patterns of disease spread, risk of infection, sizes of outbreaks, and many other epidemiological quantities. With the help of epidemiological models and a little network theory, this talk will discuss the wide range of behaviors that can appear in epidemiological systems and particularly the many different phase transitions that can occur when one or more diseases spread through a single population.