Explosive Percolation on Random Graphs and Lattices

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Over the past decade a science of networks has been emerging and providing insights into the structure and function of many diverse types of systems, such as protein-interactions in a cell, collaboration networks of scientists, and the World Wide Web. Random graphs provide a framework for modeling network phenomena, especially phase transitions, such as the sudden emergence of large-scale connectivity. This talk will give an overview and present a variant of the classic Erdos-Renyi model of network formation (using the power of two choices), showing that we can alter the location and also the nature of the phase transition, making for an explosive onset of connectivity.