Majority bootstrap percolation on regular graphs

Abstract: Consider the following process of dissemination of information over a network. Given a graph, we initially pick a (random) subset of informed vertices called active. Active vertices remain active forever. Moreover, at any stage in the process, an inactive vertex turns active if it has a majority of active neighbours. One fundamental problem is to determine whether or not all vertices will eventually become active, depending on the initial set of active vertices. This and many variants of the model with similar dissemination rules have been widely studied in the literature in the context of bootstrap percolation or as a particular case of cellular automata. In this talk, we give an introductory overview of the field, and present some recent results about the majority bootstrap percolation process on regular graphs. (This is joint work with Dieter Mitsche and Pawel Pralat.)

All Faculty, staff, students and guests are welcome to attend.