

VCU Discrete Mathematics Seminar

Kneser Graphs and 2-Bootstrap Percolation

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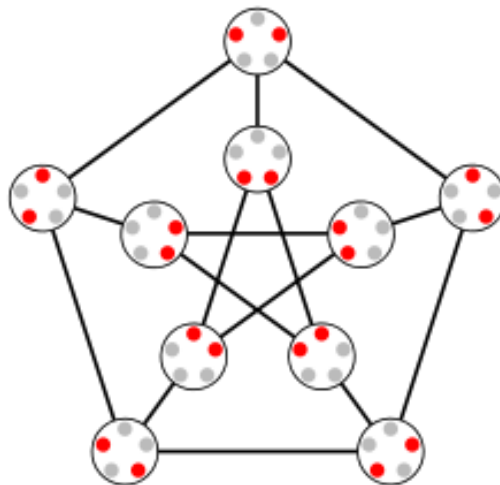
VCU

Wednesday, Nov. 10

4145 Harris Hall, and Zoom

1:00-1:50

Zoom @ <https://vcu.zoom.us/j/92975799914>
password=graphs2357



A Kneser Graph, denoted $K(s, t)$, is a graph whose vertex set is all t -element subsets of a set with s elements. Two vertices u, v are adjacent if their respective sets have no elements in common. r -neighbor bootstrap percolation, also known as r -bootstrap percolation, is a process in a graph which begins by selecting an initial set of vertices to be infected in the

1st round. In every subsequent round infected vertices remain infected while uninfected vertices become infected if they have at least r infected neighbors. In 2-Bootstrap Percolation, we begin by selecting two initial infected vertices and in each round infect every vertex with at least two infected neighbors. A graph is 2-Bootstrap Good (2-BG) if it is possible to select two vertices in the graph so that the infection percolates throughout the entire graph. A natural question is to investigate classes of graphs which are 2-BG. We characterize those Kneser graphs which are 2-BG.

For the DM seminar schedule, see:

<https://www.people.vcu.edu/~clarson/dms.html>