Central Michigan University

Department of Mathematics

Graduate Student Seminar

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Power Domination and Vertex Sum Graphs

Tuesday, April 9, 4:00 pm - 5:00 pm
Pearce Hall, Room 227

An electrical power grid can be represented as a set of vertices and edges, where electrical substations are vertices, and the power transmission lines that connect them are edges. Within the electrical grid, it is important to monitor changes in variables such as voltage and current. The problem of placing observational devices, called Phase Measurement Units, throughout a graph, so that all electrical substations (vertices) are observed, is called the power domination problem. One of the main goals in this area is to find a minimum cardinality power dominating set. In this talk, I will discuss vertex sums, a particular kind of graph product that allows us to break large graphs into smaller components. By finding power dominating sets for the subgraphs, under specific conditions, we will be able to find power dominating sets for the vertex sum supergraphs, as well.

Snacks are available in the seminar room.

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