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Dewey Taylor* (dttaylor2@vcu.edu) and **Christopher Whisenant**. *Odd dominating sets in the direct and strong products.*

An odd open dominating set of a graph is a subset of the graph's vertices with the property that the open neighborhood of each vertex in the graph contains an odd number of vertices in the subset. An odd closed r -dominating set is a subset of the graph's vertices with the property that the closed r -ball centered at any vertex in the graph contains an odd number of vertices in the subset. Odd open and closed dominating sets have been investigated by many authors.

This talk explores the existence of odd open and closed dominating sets in the direct and strong products of graphs. The n -fold direct product of simple graphs has an odd open dominating set if and only if each factor has an odd open dominating set. The n -fold strong product of simple graphs has an odd closed r -dominating set if and only if each factor has an odd closed r -dominating set.

We also explore several generalizations of this idea. (Received September 22, 2015)