



SEMINARIUM MATEMATYKA DYSKRETNA

wtorek, 7 grudnia 2021 r., godz. 12:30, on-line

Bipartite Domination in Graphs

Wayne Goddard
Clemson University

Constraints on the dominating set are well studied: these include independent domination (dominating set must be independent) and total domination (must have no isolate), but there are several others. We define the bipartite domination number of a graph as the minimum size of a dominating set that induces a bipartite subgraph. We contrast it with ordinary and independent domination. We also provide several bounds involving the order, ordinary domination number, and chromatic number. For example, we show that the bipartite domination number equals the domination number for all graphs with maximum degree at most 3; and assuming isolate-free the bipartite domination number is at most half the order for all regular graphs, all 4-colorable graphs, and all graphs with maximum degree at most 5 (and the 3, 4, and 5 cannot be improved). Joint work with Anna Bachstein and Michael Henning.