Abstract, UVM Research Day

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Abstract

Suppose you are having a dinner party and you have invited several different groups of friends to come over. You know if given the choice, these groups will end up talking to only each other, so you want to arrange them at your table so they will have to talk over each other and be forced to intermingle. By thinking of your friends as different vertices, and making edges between them, we can formulate this into a graph theoretic problem. In this way, we can devise the optimal placement of your friends at the dinner table.

We can imagine drawing a line between two people that are talking, if two lines cross then two conversations must be talking over one another. A common question in graph theory is to find the minimal number of crossings possible; our goal is to maximize this number. I have focused primarily on a special case called cycles, although I have considered other types of graphs. I will exhibit an exact solution for odd cycles, even cycles, and the disjoint union of odd and even cycles.