

The union closed sets conjecture and graphs

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Abstract:

Frankl's union-closed sets conjecture states that in every finite union-closed set of sets, there is an element that is contained in at least half of the member-sets (provided there are at least two members). The conjecture has an equivalent formulation in terms of graphs: In every bipartite graph with at least one edge, both colour classes contain a vertex belonging to at most half of the maximal stable sets (Henning Bruhn, Pierre Charbit, Oliver Schaudt, and Jan Arne Telle, 2013). The conjecture holds true for four classes of bipartite graphs.

Based on this, we are dealing with other classes of graphs.