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Minimum Rank of Regular Bipartite Graphs

The rank of a graph G is defined as the rank of its adjacency matrix A . The smallest rank among all the matrices with the same pattern of non-zeros entries as A , over the field \mathbb{F} , is called the minimum rank of A over \mathbb{F} . The smallest among all the minimum ranks of A (considering all the fields) is called the minimum rank of G . In this work, we study regular bipartite graphs. Specifically, we used linear recursions with linear complexity 2 and zero forcing sets to prove that the minimum rank of a $(n - 1)$ -regular bipartite graph, with n vertices on each side, is 4.