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The metric dimension of circulants and their Cartesian products

A pair of vertices x and y in a graph G are said to be *resolved* by a vertex w if the distance from x to w is not equal to the distance from y to w. We say that G is resolved by a subset $W \subseteq V(G)$ if every pair of vertices in G is resolved by some vertex in W. The minimum cardinality of a resolving set for G is called the *metric dimension* of G. The metric dimension of a graph has applications in network discovery and verification, combinatorial optimization and chemistry. There is great interest in finding classes of graphs with *bounded metric dimension*, where the metric dimension does not grow with the number of vertices. In this talk, we bound the metric dimension of a class of circulant graphs and their Cartesian products. This is joint work with my student Kevin Chau.