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RADIO NUMBER OF PRISM GRAPHS

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Abstract of Report Talk: Radio labeling is a graph labeling problem suggested by Chartrand, analogous to assigning frequencies to FM channel stations. Given a graph, G , the distance between two vertices is denoted as $d(u, v)$. The diameter of G , $\text{diam}(G)$, is the maximum distance between any two vertices on G . A radio labeling is an assignment $c : V(G) \rightarrow N$ such that every distinct pair of vertices u, v satisfies the inequality $d(u, v) + |c(u) - c(v)| \geq \text{diam}(G) + 1$. The span of a radio labeling is the greatest integer used. The radio number, $rn(G)$, is the minimum span over all radio labelings of G . In this presentation we determine the radio number of prisms (the products of cycles with a path on two vertices). In the process we share techniques that are likely to be of use in determining radio numbers of other families of graphs.

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