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ON RADIO NUMBERS OF $C_n \square C_n$

Aaron M Yeager

CSU Channel Islands

[Mentor: Cynthia Wyels]

Abstract of Summary Talk: Radio Labeling is a variation of Hale's Channel assignment problem. We seek to assign positive integers to the vertices of a graph G subject to various distance constraints. Specifically, a radio labeling of a connected graph G is a function $c : V(G) \rightarrow N$ such that

$$d(u, v) + |c(u) - c(v)| \geq 1 + \text{diam}(G)$$

for every two distinct vertices u and v of G . The span of a radio labeling is the greatest integer assigned to a vertex. A radio number of a graph G is the minimum span, taken over all radio labelings of G . We establish the radio number of $C_{2k} \square C_{2k}$ and share progress towards identifying the radio number of $C_{2k+1} \square C_{2k+1}$.

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Contact: aaronyeager@hotmail.com

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