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THE RADIO NUMBER OF GEAR GRAPHS

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Abstract of Poster Presentation: Let $d(u, v)$ denote the distance between two vertices of a connected graph G , and $diam(G)$ be the diameter of G . A *radio labeling* c of G is an assignment of positive integers to the vertices of G satisfying

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

The maximum integer in the range of the labeling is its span. The *radio number* of G , $rn(G)$, is the minimum possible span. The gear graph, G_n , is a planar graph with $2n + 1$ vertices and $3n$ edges. We prove that the radio number of the n -gear is $4n + 2$. [FC07191046]

[Joint work with Dr. Maggy Tomova]

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