

Geodesic Leech Graphs

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Let $f : E \rightarrow \{1, 2, 3, \dots\}$ be an edge labeling of G . The weight of a path P is the sum of the labels assigned to the edges of P . The edge labeling f is called a geodesic Leech labeling, if the set of weights of the geodesic paths in G is $\{1, 2, 3, \dots, t_{gp}(G)\}$, where $t_{gp}(G)$, the geodesic path number of G , is the number of geodesic paths in G . A graph which admits a geodesic Leech labeling is called a geodesic Leech graph. In this paper, we prove the existence of infinite families of geodesic Leech graphs. It is also proved that C_5 is not a geodesic Leech graph. Some open problems in this area is also included.

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