
Zbl 669.05046

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K-path irregular graphs. (In English)

Combinatorics, graph theory, and computing, Proc. 19th Southeast. Conf., Boca Raton/Fla. 1988, Congr. Numerantium 65, 201-210 (1988).

[For the entire collection see Zbl 665.00002.]

A connected graph G is k-path irregular, $k \geq 1$, if every two vertices of G that are connected by a path of length k have distinct degrees. This extends the concepts of highly irregular (or 2-path irregular) graphs and totally segregated (or 1-path irregular) graphs. Various sets S of positive integers are considered for which there exist k-path irregular graphs for every $k \in S$. It is shown for every graph G and every odd positive integer k that G can be embedded as an induced subgraph in a k-path irregular graph. Some open problems are also stated.

Classification:
05C38 Paths and cycles
05C99 Graph theory

Keywords:
k-path irregular graphs