

Zbl 679.05061

Alavi, Yousef; Malde, Paresh J.; Schwenk, Allen J.; Erdős, Paul
The vertex independence sequence of a graph is not constrained. (In English)
Combinatorics, graph theory, and computing, Proc. 18th Southeast. Conf., Boca Raton/Fl. 1987, Congr. Numerantium 58, 15-23 (1987).

[For the entire collection see Zbl 638.00009.]

We consider a sequence of parameters a_1, a_2, \dots, a_m associated with a graph G . For example, m can be the maximum number of independent vertices in G and each a_i is then the number of independent sets of order i . Sorting this list into nondecreasing order determines a permutation π on the indices so that $a_{\pi(1)} \leq a_{\pi(2)} \leq \dots \leq a_{\pi(m)}$. We call a sequence constrained if certain permutations π cannot be realized by any graph. It is well known that the edge independence sequence is constrained to be unimodal. The vertex independence sequence was conjectured to be likewise, but we show that, quite the contrary, it is totally unconstrained. That is, every permutation is realized by some graph.

R.C.Read

Classification:

05C75 Structural characterization of types of graphs

05C99 Graph theory

Keywords:

vertex independence sequence