Abstract

Computer construction of minimal graphs of diameter 2

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A (n, m)-graph of diameter 2 with n vertices and m edges is called *minimal* if removing of any edge increases its diameter. Füredi proved that a finite number of n-vertex nonbipartite minimal graphs of diameter 2 have more than $(n-1)^2+1$ edges. Up to now only one such minimal (6,8)-graph is known. An algorithm for finding of minimal graphs is discussed. Using a computer, a new nonbipartite minimal (12,32)-graph of diameter 2 is constructed.