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Elegant conjecture of bicyclic graphs. (Chinese. English summary) [Zbl 1438.05223]


Summary: A recursive backtracking algorithm is designed by combining pruning with pre-judgment function. All the bicyclic graphs in 16 points are elegantly verified, and all elegant and non-elegant graphs in 16 points are obtained. According to the experimental results, when \(4 \leq p \leq 16\) and \(p + 1 = 1 \pmod{4}\), the bicyclic graph \(C_{(m,n)}\) is a non-elegant graph, and the number of non-elegant graphs is \(\frac{p}{2} - 2\), and all the other bicyclic graphs are elegant graphs. Finally, the conjecture is given: bicyclic graphs are almost all elegant graphs.

MSC:

05C78 Graph labelling (graceful graphs, bandwidth, etc.)

Keywords:
bicyclic graphs; elegant graphs; elegant labeling

Full Text: DOI