Summary: The individualize and refine approach for computing automorphism groups and canonical forms of graphs is studied. Two new search space pruning techniques, conflict propagation based on recorded failure information and recursion over nonuniformly joined components, are presented. Experimental results show that the techniques can result in substantial decrease in both search space sizes and run times.

For the entire collection see [Zbl 1213.68050].

MSC:

- 05C85 Graph algorithms (graph-theoretic aspects)
- 05C15 Coloring of graphs and hypergraphs
- 05C25 Graphs and abstract algebra (groups, rings, fields, etc.)
- 68T20 Problem solving in the context of artificial intelligence (heuristics, search strategies, etc.)

Software:

nauty

Full Text: DOI