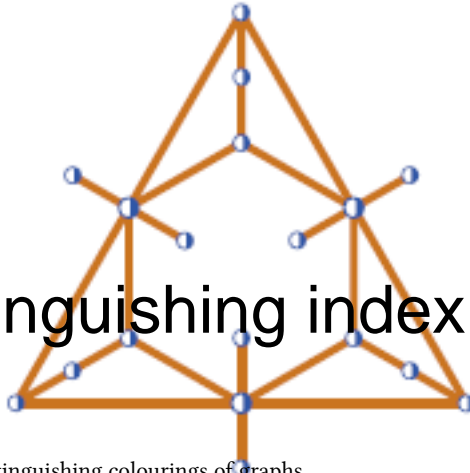


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Edge-distinguishing index of a graph



Content :

We introduce a concept of edge-distinguishing colourings of graphs.

A closed neighbourhood of an edge e in a graph G is a subgraph $N[e]$ induced by e and all edges adjacent to it. We say that a coloring $c: E(G) \rightarrow C$ distinguishes two edges e and e' if there does not exist an isomorphism φ of $N[e]$ onto $N[e']$ such that $\varphi(e)=e'$, and φ preserves colours of c . An edge-distinguishing index of a graph G is the minimum number of colours in a proper colouring of edges of G , which distinguishes every two distinct edges. Such a colouring is called edge-distinguishing.

We determine the edge-distinguishing index for cycles, paths, complete graphs and complete bipartite graphs.

Primary authors : KALINOWSKI, Rafal (AGH University of Science and Technology)

Co-authors : WOZNIAK, Mariusz (AGH University of Science and Technology)

Presenter : KALINOWSKI, Rafal (AGH University of Science and Technology)

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