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(Strong) total proper connection of some digraphs. (English) [Zbl 07380951]

Summary: The total proper connection number of a given digraph $D$, represented by $\overrightarrow{tpc}(D)$, denotes the smallest number of colors needed for making $D$ total proper connected. The strong total proper connection number of $D$, represented by $\overrightarrow{stpc}(D)$, shows the smallest number of colors required for making $D$ strong total proper connected. In the present work, we represent some preliminary findings on $\overrightarrow{tpc}(D)$ and $\overrightarrow{stpc}(D)$. Moreover, findings on the (strong) total proper connection numbers of biorientations of graphs, circle digraphs, circulant digraphs and cacti digraphs are provided.

MSC:
05C20 Directed graphs (digraphs), tournaments
05C38 Paths and cycles
05C15 Coloring of graphs and hypergraphs
05C35 Extremal problems in graph theory
05C40 Connectivity

Keywords:
total proper path; total proper geodesic; $tpc$-number; $stpc$-number

Full Text: DOI

References:
[10] Krivelevich, M.; Yuster, R., The rainbow connection of a graph is (at most) reciprocal to its minimum degree, J Gr Theory, 63, 185-191 (2009) · Zbl 1193.05079


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