ON RAINBOW CONNECTION NUMBERS IN DIGRAPHS

Elżbieta Sidorowicz
Faculty of Mathematics Computer Science and Econometrics
University of Zielona Góra
e-mail: e.sidorowicz@wmie.uz.zgora.pl

Éric Sopena
Univ. Bordeaux, Bordeaux INP, CNRS, LaBRI, UMR5800, F-33400 Talence, France
e-mail: eric.sopena@labri.fr

In an arc-coloured digraph $D$, a path is said to be rainbow if it does not use two arcs with the same colour. Then the digraph $D$ is said to be rainbow connected if any two vertices are connected by a rainbow path. The rainbow connection number of a strong connected digraph $D$ is the smallest number of colours that are needed in order to make $D$ rainbow connected.

In this talk, we consider rainbow connection number of digraphs and parameters such as rainbow vertex-connection, total rainbow connection and strong rainbow connection numbers of digraphs. We give some properties of these parameters and establish relations between them. We study the strong rainbow connection number of minimally strongly connected digraphs and non-Hamiltonian strong digraphs. Furthermore, we give some results for tournaments.

Keywords: rainbow connection, rainbow vertex-connection, total rainbow connection, digraphs.

AMS Subject Classification: 05C69, 05C05.

References

