A note on an embedding problem in transitive tournaments

Agnieszka Görlich, Monika Pilśniak [*]

University of Science and Technology AGH, Al. Mickiewicza 30, 30-059 Kraków, Poland

Abstract. Let TT_n be a transitive tournament on n vertices. It is known [3] that for any directed acyclic graph $\overrightarrow{G}$ of order n and size not greater than $\frac{3}{4}(n-1)$ two directed graphs isomorphic to $\overrightarrow{G}$ are arc-disjoint subgraphs of TT_n. In this paper we consider a problem of embedding of oriented acyclic graphs into their complements in transitive tournaments. We show that any directed acyclic graph $\overrightarrow{G}$ of size at most $\frac{2}{3}(n-1)$ is embeddable into its complements in TT_n. Moreover, this bound is generally the best possible.

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