DOMINATION IN QUASI-TRANSITIVE DIGRAPHS

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In 2014 D. Pálvölgyi and A. Gyárfás explored the minimum dominating set of a digraph with an arc-partition into transitive digraphs, they propose the following conjecture "For each positive integer k there exists a (least) p(k) such that every k-transitive tournament has a dominating set of at most p(k) vertices", a special case of a conjecture of Erdős, Sands, Sauer and Woodrow.

We consider the vertex version of this problem. We present conditions on the indegree of the vertices in a vertex partitions into k transitive tournaments of (not necessarily finite) quasi-transitive digraphs to assure a dominating set of order at most two. Since a tournament is a quasi-transitive digraph, the result also holds for tournaments.

Keywords: Domination, Quasi-transitive digraphs, Tournaments.

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References

