

Strong Tournaments That are not Cycle Extendable

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A cycle C in a digraph D is *extendable* if there is a cycle C' of D such that $V(C) \subset V(C')$ and $|V(C)| + 1 = |V(C')|$. If every nonhamiltonian cycle of D is extendable, then D is said to be *cycle extendable*. A tournament is *strongly connected* if there is a directed path in each direction between every pair of vertices. We characterize the strong tournaments that are not cycle extendable. The characterization shows that all strong tournaments that are not cycle extendable are a blow up of a cycle extendable strong tournament T , which is obtained by replacing each vertex of T with a cycle extendable strong tournament.

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