

DISCRETE MATHEMATICS
SEMINAR

Erdos-Pósa property of tripods in directed graphs

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Abstract: Let D be a directed graph with distinguished sets of sources $S \subseteq V(D)$ and sinks $T \subseteq V(D)$. A *tripod* in D is a subgraph consisting of the union of two S - T -paths that have distinct start-vertices and the same end-vertex, and are disjoint apart from sharing a suffix. We prove that tripods in directed graphs exhibit the Erdős-Pósa property. More precisely, there is a function $f: \mathbb{N} \rightarrow \mathbb{N}$ such that for every digraph D with sources S and sinks T , if D does not contain k vertex-disjoint tripods, then there is a set of at most $f(k)$ vertices that meets all the tripods in D .

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