Graphs (Matroids) with $(k \pm \epsilon)$-edge-disjoint spanning trees (disjoint bases)

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Abstract

In this research project we consider these problems:

(i) For a graph G that does not have k-edge-disjoint spanning trees, we are to determine the minimum number of edges that must be added to result in a graph with k-edge-disjoint spanning trees. Likewise, given a matroid M that does not have k-disjoint bases, we want to find a matroid M' that contains M as a restriction such that M' has k disjoint bases and such that $|E(M') - E(M)|$ is minimized.

(ii) For a graph G with k disjoint spanning trees, we are to determine which edge e such that $G - e$ also has k edge-disjoint spanning trees. Likewise, for a matroid M with k disjoint bases, characterize the elements e such that $M - e$ also has k disjoint bases.

Researches on these problems will be reported.

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