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A characterization of partial 3-trees. (English) Zbl 0701.90092
Networks 20, No. 3, 299-322 (1990).

The paper is concerned with a class of subgraphs called k -trees and their subgraphs. A k -tree is defined recursively as follows. The complete graph K_k on k points is a k -tree. Given a k -tree G on $n \geq k$ points, a k -tree on $n + 1$ points is obtained by adding a new point u and edges connecting u to every point of a K_k in G . A partial k -tree is a subgraph of some k -tree. The authors establish properties of partial 3-trees and show that a graph is a partial 3-tree if and only if it has no subgraph contractible to K_5 , $K_{2,2,2}$, $C_8(1,4)$ & $K_2 \times C_5$. Hitherto, such a characterization of partial k -trees was known only for the values of $k \leq 2$.

Reviewer: [M.Savelsbergh](#)

MSC:

[90C35](#) Programming involving graphs or networks
[05C05](#) Trees

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Keywords:

subgraphs; k -trees; partial 3-tree

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