**Satyanarayana, A.**; **Tung, L.**
**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 $k \leq 2$.

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