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**Total dominating functions in trees: Minimality and convexity.** (English) Zbl 0819.05035  
J. Graph Theory 19, No. 1, 83-92 (1995).

Authors' abstract: A total dominating function (TDF) of a graph  $G = (V, E)$  is a function  $f : V \rightarrow [0, 1]$  such that for each  $v \in V$ ,  $\sum_{u \in N(v)} f(u) \geq 1$  (where  $N(v)$  denotes the set of neighbors of vertex  $v$ ). Convex combinations of TDFs are also TDFs. However, convex combinations of minimal TDFs (i.e., MTDFs) are not necessarily minimal. In this paper we discuss the existence in trees of a universal MTDF (i.e., an MTDF whose convex combinations with any other MTDF are also minimal).

Reviewer: [B. Andrásfai \(Budapest\)](#)

**MSC:**

[05C35](#) Extremal problems in graph theory  
[05C40](#) Connectivity  
[05C05](#) Trees

Cited in **6** Documents

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[convexity](#); [total dominating function](#); [convex combinations](#); [trees](#)

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**References:**

- [1] Cockayne, Networks 24 pp 83- (1994)
- [2] Masters thesis, University of Victoria (1992).

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