1126-05-367 **Yaping Mao**, **Christopher Melekian*** (ccmeleki@oakland.edu) and **Eddie Cheng**.
Constructing Internally Disjoint Pendant Steiner Trees in Lexicographic Product Networks.

The concept of pendant tree-connectivity was introduced by Hager in 1985. For a graph $G = (V, E)$ and a set $S \subseteq V(G)$ of at least two vertices, *an S-Steiner tree* or *a Steiner tree connecting S* (or simply, *an S-tree*) is a such subgraph $T = (V', E')$ of G that is a tree with $S \subseteq V'$. For an S-Steiner tree, if the degree of each vertex in S is equal to one, then this tree is called a *pendant S-Steiner tree*. Two pendant S-Steiner trees T and T' are said to be *internally disjoint* if $E(T) \cap E(T') = \varnothing$ and $V(T) \cap V(T') = S$. For $S \subseteq V(G)$ and $|S| \geq 2$, the *local pendant tree-connectivity* $\tau_G(S)$ is the maximum number of internally disjoint pendant S-Steiner trees in G. For an integer k with $2 \leq k \leq n$, *pendant tree k-connectivity* is defined as $\tau_k(G) = \min\{\tau_G(S) \mid S \subseteq V(G), |S| = k\}$. In this paper, we prove that for any two connected graphs G and H, $\tau_3(G \circ H) \geq \tau_3(G)|V(H)| + \min\{|V(H)| - 2\tau_3(G) - 2, 0\}$, where $G \circ H$ denotes the lexicographic product of G and H. Moreover, the bound is sharp. We also derive an upper bound of $\tau_3(G \circ H)$. (Received January 17, 2017)