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Alexander Hoyer* (ahoyer3@gatech.edu) and **Robin Thomas**. *The Edge-Independent Spanning Tree Conjecture*.

For a graph G , a set of subtrees of G are edge-independent with root $r \in V(G)$ if, for every vertex $v \in V(G)$, the paths between v and r in each tree are edge-disjoint. A set of k such trees represent a set of redundant broadcasts from r which can withstand $k - 1$ edge failures. It is easy to see that k -edge-connectivity is a necessary condition for the existence of a set of k edge-independent spanning trees for all possible roots. Itai and Rodeh have conjectured that this condition is also sufficient. This had previously been proven for $k = 2, 3$. We prove the case $k = 4$ using a decomposition of the graph similar to an ear decomposition. (Received February 13, 2018)