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**Piotr Minc\*** (mincpio@auburn.edu), Department of Mathematics and Statistics, 221 Parker Hall, Auburn University, AL 36849-5310. *Inverse limits of simplicial trees and the problem of small retractions of dendroids onto trees.*

Any finite subset of a (metric) tree  $T$  containing all branch and end points is a set of vertices of  $T$ . A simplicial tree  $S$  is a tree  $T$  with a fixed set of vertices  $V$ . The closures of components of  $T \setminus V$  are edges of  $S$ . A continuous map  $f : T_1 \rightarrow T_0$  is also a simplicial map between simplicial trees  $S_1 = (T_1, V_1)$  and  $S_0 = (T_0, V_0)$  if  $f$  restricted to any edge of  $S_1$  is either a constant map into  $V_0$  or a homeomorphism onto an edge of  $S_0$ . Inverse sequences with simplicial bonding maps are combinatorially defined by the corresponding inverse sequences of vertices. Their inverse limits are locally much simpler than arbitrary inverse limits of metric trees.

A dendroid is an arc connected inverse limit of metric trees. A dendroid  $D$  admits small retractions onto trees if for every  $\epsilon > 0$  there is an  $\epsilon$ -retraction of  $D$  onto a tree. It is not known if each dendroid admits small retractions onto trees. We show how to approximate an arbitrary dendroid  $D$  by a dendroid  $X$  which is an inverse limit of simplicial trees with simplicial bonding maps in such a way that  $X$  admits small retractions onto trees if and only if  $D$  has the same property. This reduces the problem of small retractions to a simpler combinatorially defined class. (Received September 05, 2007)