

## **Abstract**

Rooted plane trees are reduced by four different operations on the fringe. The number of surviving nodes after reducing the tree repeatedly for a fixed number of times is asymptotically analyzed. The four different operations include cutting all or only the leftmost leaves or maximal paths. This generalizes the concept of pruning a tree. The results include exact expressions and asymptotic expansions for the expected value and the variance as well as central limit theorems.