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Michael Dairyko and Lara Pudwell* (lara.pudwell@valpo.edu), Department of Mathematics & Computer Science, 1900 Chapel Drive, Valparaiso, IN 46383, and Samantha Tyner and Casey Wynn. Non-contiguous pattern avoidance in binary trees.

In 2010, Rowland considered pattern avoidance in rooted ordered binary trees with the following definition: binary tree T contains binary tree t if and only if T contains t as a contiguous rooted ordered subgraph. We modify Rowland's definition such that binary tree T contains tree t if and only if there is a sequence of edge contractions of T that produce tree T* which contains t as a rooted ordered subgraph. While Rowland's tree patterns are analogous to consecutive permutation patterns, this new definition is analogous to classical permutation patterns. We completely classify Wilf classes of trees avoiding a single non-contiguous binary tree pattern and provide generating functions that enumerate pattern-avoiding trees according to number of leaves. We also provide bijective relationships between certain sets of pattern-avoiding trees and sets of pattern-avoiding permutations.

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