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Daniel Alonzo Gray* (dagray@georgiasouthern.edu). *Plane Binary Trees and Superpatterns for Layered Permutations.*

Let P be a set of permutation patterns. If τ is a permutation that contains every element of P as a pattern, then we say that τ is a P -superpattern. Since Arratia coined the term in 1999, there have been several investigations into the length of the shortest S_k -superpattern, where S_k is the set of permutations of length k . Here, we will construct superpatterns for layered permutations of length k and explore an interesting connection between this set of superpatterns and plane binary trees on k vertices. (Received January 18, 2016)