1006-05-5   **L. A. Szekely** and **H. Wang*** (`hwang0@math.sc.edu`). *Wiener index and subtrees of binary trees.*

The Wiener index of a tree is the sum of all pairwise distances between vertices. It is one of the main descriptors that correlate a chemical compound's molecular graph with experimentally gathered data regarding the compound's characteristics. We characterize binary trees with n leaves, which have the greatest number of subtrees (or leaf-containing subtrees). These binary trees coincide with those which were shown by Fischermann *et al.* and Jelen and Triesch to minimize the Wiener index. (Received September 16, 2004)