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Gainesville, FL 32611. *The Wiener index of trees with given degree sequence*. Preliminary report.

The Wiener index of a graph is the sum of the distances between all pairs of vertices, it has been one of the main descriptors that correlate a chemical compound's molecular graph with experimentally gathered data regarding the compound's characteristics. The Wiener index of general trees and trees with fixed maximum degree were studied before. We characterize trees that achieve the extremal values of the Wiener index, given the number of vertices and the degree sequence. (Received December 10, 2006)