1022-05-63   **Hua Wang*** (`hua@math.ufl.edu`) and **Russell Kirk**. *Largest number of subtrees of trees with a given maximum degree.* Preliminary report.

The Wiener index of a tree is the sum of the distances between all pairs of vertices, which has been widely explored and used in biochemistry. Recent study shows a interesting phenomenon, that among certain class of trees (general trees, binary trees), the ones which maximize the number of of subtrees coincide with those that minimize the Wiener index. We find the trees that maximize the number of subtrees among trees of a given size and fixed maximum degree, these trees were found to minimize the Wiener index by Fischermann et al., and independently Jelen and Triesch. We also propose the possibility to use the discussed technique to study the extremal problems for other problems. (Received September 08, 2006)