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Maximum Wiener index of planar triangulations and quadrangulations. Preliminary report.

The Wiener index of a connected graph is the sum of distances for all unordered pairs of vertices. This is perhaps the most frequently used graph index in sciences, since Harold Wiener in 1947 observed that the Wiener index is closely correlated with the boiling points of alkane molecules. We determine (asymptotically) the maximum Wiener index of planar triangulations and quadrangulations on n vertices. (Received January 26, 2018)