Abstract

The Wiener index is one of the oldest molecular-graph-based structure-descriptors. It was first proposed by American Chemist Harold Wiener in 1947 as an aid to determine the boiling point of paraffin. The study of Wiener index is one of the current areas of research in mathematical chemistry. It also gives good correlations between Wiener index (of molecular graphs) and the physico-chemical properties of the underlying organic compounds. That is, the Wiener index of a molecular graph provides a rough measure of the compactness of the underlying molecule. The Wiener index \( W(G) \) of a connected graph \( G \) is the sum of the distances between all pairs (ordered) of vertices of \( G \). In this paper, we give the program for calculating the Wiener index of Cata-condensed Cyclic graph and two cycles sharing their edges using MATLAB and discuss the coincidence of Wiener indices of Cata-condensed Cyclic graph with its characteristic graph and give the Wiener number for two Cycles sharing maximum and minimum number of edges.

References

- http://mathworld. wolfram. com/WienerIndex

**Index Terms**

Computer Science

Applied Mathematics

**Keywords**

Cycle  Distance  Wiener index  MATLAB