International Journal of Applied Mathematics
& Statistical Sciences (IJAMSS)
ISSN(P): 2319-3972; ISSN(E): 2319-3980
Vol. 4, Issue 6, Oct -Nov 2015, 63-68

International Academy of Science,
Engineering and Technology
Connecting Researchers; Nurturing Innovations

WIENER INDEX OF SOME PATH RELATED GRAPHS

A. SUMATHI

Department of Mathematics, Seethalakshmi Ramaswami College, Tiruchirappalli, Tamil Nadu, India

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. $W(G) = \frac{1}{2}\sum_{u,v} d(u,v)$. In this paper, the researcher finds the Wiener index of some path related graphs like m^{th} power of path graph, m_i^{th} power of path graph σ mountain, σ hill.

KEYWORDS: Adjacency Matrix, MATLAB, Wiener Index