

WIENER INDEX OF WEIGTED GRAPHS

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MSC 2000: 05C50

Abstract

The Wiener index of simple connected G graph defined as

$$W(G) = \frac{1}{2} \sum_{i=1}^n \sum_{j=1}^n d(i, j).$$

In this paper, we will define of Wiener index of edge-weighted and vertex-weighted graphs, which weights are positive definite matrices. Moreover we will give some properties of Wiener index for this graphs.

Keywords: Weighted graphs, Laplacian matrices, Wiener index

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