عنوان مقاله:

MORE ON EDGE HYPER WIENER INDEX OF GRAPHS

نویسندگان:

A. Alhevaz - *Department of Mathematics, Shahrood University of Technology, P.O. Box: ۳۱۶- ۳۶۱۹۹۹۵۱۶۱, Shahrood, Iran.*

M. Baghipur - *Department of Mathematics, Shahrood University of Technology, P.O. Box: ۳۱۶- ۳۶۱۹۹۹۵۱۶۱, Shahrood, Iran.*

خلاصه مقاله:

Let G=(V(G),E(G)) be a simple connected graph with vertex set V(G) and edge set E(G). The (first) edge-hyper Wiener index of the graph G is defined as: $WW_{e}(G)=\sum_{\{f,g\}\subseteq E(G)}(d_{e}(f,g|G)+d_{e}^{2}(f,g|G))=\frac{1}{2}\sum_{f\in E(G)}(d_{e}(f|G)+d^{2}_{e}(f|G)),$ where de(f,g|G) denotes the distance between the edges f=xy and g=uv in E(G) and de(f|G)= $\sum$ g€(G)de(f,g|G). In this paper we use a method, which applies group theory to graph theory, to improving mathematically computation of the (first) edge-hyper Wiener index in certain graphs. We give also upper and lower bounds for the (first) edge-hyper Wiener index of a graph in terms of its size and Gutman index. Also we investigate products of two or more graphs and compute the second edge-hyper Wiener index of the some classes of graphs. Our aim in last section is to find a relation between the third edge-hyper Wiener index of a general graph and the hyper Wiener index of its line graph. of two or more graphs and compute edge-hyper Wiener number of some classes of graphs.

کلمات کلیدی:

Edge-hyper Wiener index, line graph, Gutman index, connectivity, edge-transitive graph

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