dMFA

ARS MATHEMATICA CONTEMPORANEA

Some properties of the Zagreb eccentricity indices

Kinkar Ch. Das, Dae-Won Lee, Ante Graovac

Abstract

The concept of Zagreb eccentricity (E_1 and E_2) indices was introduced in the chemical graph theory very recently . The first Zagreb eccentricity (E_1) and the second Zagreb eccentricity (E_2) indices of a graph G are defined as $E_1 = E_1(G) = \Sigma_{v_i \in V(G)} e_i^2$ and $E_2 = E_2(G) = \Sigma_{v_i v_j \in E(G)} e_i \cdot e_j$, where $E(G)$ is the edge set and e_i is the eccentricity of the vertex v_i in G. In this paper we give some lower and upper bounds on the first Zagreb eccentricity and the second Zagreb eccentricity indices of trees and graphs, and also characterize the extremal graphs.

Math Sci Net: 05C12 (05C40 05C90)

Some properties of the Zagreb eccentricity indices

Povzetek

Koncept zagrebških ekscentričnih (E_1 in E_2) indeksov je bil pred kratkim predstavljen v teoriji kemijskih grafov. Prvi zagrebški ekscentirčni indeks ($E1$) in drugi zagrebški ekscentrični indeks sta definirana kot $E_1 = E_1(G) = \Sigma v_i \in V(G) \, e_i^2$ in $E_2 = E_2(G) = \Sigma v_i v_j \in E(G) \, e_i \cdot e_j$, kjer je $E(G)$ množica povezav in e_i ekscentričnost vozlišča v_i v G. V članku podamo nekatere spodnje in zgornje meje v zvezi s prvim in drugim zagrebškim ekscentričnim indeksom drevesov in grafov ter karakteriziramo ekstremalne grafe.