Some remarks on Balaban and sum-Balaban index[*]

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Abstract

In the paper we study maximal values of Balaban and sum-Balaban index, and correct some results appearing in the literature which are only partially correct. Henceforth, we were able to solve a conjecture of M. Aouchiche, G. Caporossi and P. Hansen regarding the comparison of Balaban and Randić index. In addition, we showed that for every k and large enough n, the first k graphs of order n with the largest value of Balaban index are trees. We conclude the paper with a result about the accumulation points of sum-Balaban index.

Keywords: Topological index, Balaban index, sum-Balaban index, Randić index.

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Nekaj pripomb k Balabanovemu in vsotno-Balabanovemu indeksu[*]

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Povzetek

V članku raziskujemo maksimalne vrednosti Balabanovega in vsotno-Balabanovega indeksa in popravimo nekatere rezultate, ki se pojavljajo v literaturi in so samo delno pravilni. Tako smo lahko dokazali domnevo M. Aouchicha, G. Caporossija in P. Hansena v zvezi z Balabanovim in Randićevim indeksom. Poleg tega pokažemo, da za vsak k in dovolj velik n velja: prvih k grafov reda n z velikimi vrednostmi Balabanovega indeksa so drevesa. Članek sklenemo z rezultatom o stekališčih vsotno-Balabanovega indeksa.

Ključne besede: Topološki indeks, Balabanov indeks, vsotni-Balabanov indeks, Randićev indeks.

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