



Also available at <http://amc-journal.eu>
ISSN 1855-3966 (printed ed.) ISSN 1855-3974 (electronic edn.)
ARS MATHEMATICA CONTEMPORANEA 11 (2016) 247-254

Modified Wiener index via canonical metric representation, and some fullerene patches

Modjtaba Ghorbani and Sandi Klavžar

Abstract: A variation of the classical Wiener index, the modified Wiener index, that was introduced in 1991 by Graovac and Pisanski, takes into account the symmetries of a given graph. In this paper it is proved that the computation of the modified Wiener index of a graph G can be reduced to the computation of the Wiener indices of the appropriately weighted quotient graphs of the canonical metric representation of G . The computation simplifies in the case when G is a partial cube. The method developed is applied to two infinite families of fullerene patches.

Keywords: Modified Wiener index, canonical metric representation, partial cubes, fullerene patches, nanocones.

Math. Subj. Class.: 05C12, 92E10



Also available at <http://amc-journal.eu>
ISSN 1855-3966 (printed ed.) ISSN 1855-3974 (electronic edn.)
ARS MATHEMATICA CONTEMPORANEA 11 (2016) 247-254

Modificirani Wienerjev indeks s pomočjo kanonične metrične reprezentacije in nekaj fullerenskih krp

Modjtaba Ghorbani and Sandi Klavžar

Povzetek: Različica klasičnega Wienerjevega indeksa, modificirani Wienerjev indeks, ki sta ga leta 1991 vpeljala Graovac in Pisanski, upošteva simetrije danega grafa. V tem članku pokažemo, da se da računanje modificiranega Wienerjevega indeksa grafa G prevesti na računanje Wienerjevih indeksov primerno uteženih kvocientnih grafov kanonične metrične reprezentacije grafa G . Računanje se poenostavi v primeru, ko je G delna kocka. Metodo, ki smo jo razvili, uporabimo na dveh neskončnih družinah fullerenskih krp.

Ključne besede: Modificirani Wienerjev indeks, kanonična metrična reprezentacija, delne kocke, fullerenske krpe, nanostožci.

Math. Subj. Class.: 05C12, 92E10