

Abstract

In Gutman I., Furtula B. (Eds): *Distance in Molecular Graphs - Theory, Mathematical Chemistry Monographs*, Vol. 12, University of Kragujevac, Kragujevac, Serbia, 123 - 138 (2012) ISBN: 978-86-6009-012-8.

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On distance-based entropy measures

Descriptors derived from distances in graphs can be used to quantify structural information of a graph. For instance, quantities such as the distance code, the distance-degree and matrices based on the distances between vertices or edges in the graph have been proposed. Generally, these concepts could be of great interest in various disciplines because complex networks are currently ubiquitous.

Yet, only some of the just mentioned quantities based on distances and Shannon's entropy have been applied in mathematical and structural chemistry. Furthermore, these measures are rather unknown to other scientific communities as the potential of some of these distance-based information measures has not been demonstrated yet in an interdisciplinary manner.

Thus, we review some of these descriptors and highlight their strong and weak points by determining their correlation and uniqueness.