SUM-CONNECTIVITY ENERGY OF GRAPHS

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Abstract. Energy of a graph is an important aspect related to the eigenvalues of the adjacency matrix of the graph and chemically to the intermolecular forces producing the energy of the corresponding molecule. There are different variations of the energy obtained by taking some other graph matrix instead of the adjacency matrix. Here the authors study a new type of energy called the sum-connectivity energy $SCE(G)$ of a graph $G$ which is defined as the sum of the absolute values of the eigenvalues of the sum-connectivity matrix. In this paper we compute the sum-connectivity characteristic polynomial and the sum-connectivity energy for specific graphs, some edge deleted graphs and some specific types of complements. Some properties and bounds for $SCE(G)$ are also discussed.

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