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SUM CONNECTIVITY MATRIX AND ENERGY OF A T_2 HYPERGRAPH

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Abstract: Let H be a T_2 hypergraph with $n \geq 4$. The sum connectivity matrix of H, denoted by $SC(H)$ is defined as the square martix of order n, whose $(i,j)^{th}$ entry is $\frac{1}{\sqrt{d_i+d_j}}$ if x_i and x_j are adjacent and zero for other cases. The sum connectivity energy $SCE(H)$ of H is the sum of the absolute values of the eigenvalues of $SC(H)$. It is shown that, for a T_2 hypergraph $\lfloor SCE(H) \rfloor \leq \left\lfloor 1 + n - \sqrt{\frac{n}{\delta}} \right\rfloor$,where δ is the minimum degree of H.

Keywords and Phrases: T_2 hypergraph, sum connectivity matrix, sum connectivity energy.

2020 Mathematics Subject Classification: 05C65, 05C50.

1. Introduction

The basic definitions and terminologies of a hypergraph are not given here and we refer to it [1] and [5]. The concept of hypergraph was introduced by Berge in 1967. In 2017, Seena V and Raji Pilakkat introduced Hausdorff hypergraph,