

## Extremal Laplacian Energy of Threshold Graphs

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**Abstract :** Let  $G$  be a connected threshold graph of order  $n$  with  $m$  edges and trace  $T$ . In this talk we give a lower bound on Laplacian energy in terms of  $n$ ,  $m$ , and  $T$  of  $G$ . From this we determine the threshold graphs with the first four minimal Laplacian energies. We also list the first 20 minimal Laplacian energies among threshold graphs. Let  $\sigma = \sigma(G)$  be the number of Laplacian eigenvalues greater than or equal to average degree of graph  $G$ . Using this concept, we obtain the threshold graphs with the largest and the second largest Laplacian energies.

**Keywords :** Laplacian eigenvalues, Laplacian energy, threshold graphs, extremal graphs

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