

**Zhang, Lili; Hennayake, Kamal; Lai, Hong-Jian; Shao, Yehong**

**A lower bound of the  $l$ -edge-connectivity and optimal graphs.** (English) Zbl 1160.05039  
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Summary: For an integer  $l > 1$ , the  $l$ -edge-connectivity of a graph  $G$  with  $|V(G)| \geq l$ , denoted by  $\lambda_l(G)$ , is the smallest number of edges the removal of which results in a graph with  $l$  components. In this paper, we study lower bounds of  $\lambda_l(G)$  and optimal graphs that reach the lower bounds. Former results by *F. T. Boesch* and *S. Chen* ["A generalization of line connectivity and optimally invulnerable graphs," *SIAM J. Math.* 34, 657–665 (1978; [Zbl 0386.05042](#))] are extended. We also present in this paper an optimal model of interconnection network  $G$  with a given  $\lambda_l(G)$  such that  $\lambda_2(G)$  is maximized while  $|E(G)|$  is minimized.

**MSC:**

[05C40](#) Connectivity

[05C35](#) Extremal problems in graph theory

Cited in **2** Documents

**Keywords:**

generalized edge connectivity; circulant graphs