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John T. Saccoman* (saccomjt@shu.edu), Seton Hall University Dept. of Math and CS, 400 South Orange Ave, South Orange, NJ 07079. *A surgery reducing the All-Terminal Reliability of threshold graphs having a specified degree condition.*

A graph G is a threshold graph if, for all pairs of nodes u and v in G , the neighborhood of u excluding v is completely contained in the neighborhood of v excluding u whenever $\deg(u) \leq \deg(v)$.

We define All-Terminal Reliability (ATR) of a network modeled by a graph as follows: the edges of a graph are assumed to have equal and independent probabilities of operation p , and the ATR of the graph is defined to be the probability that a spanning connected subgraph operates. It is believed that threshold graphs provide the best lower bound on the ATR for graphs in a particular class. There exist surgeries that lower ATR for some threshold graphs, but they do not work in all cases. In "A surgery reducing the number of spanning trees for certain threshold graphs" (Congressus Numerantium 178, pp. 15-31), the author, along with Sarah Bleiler, present a surgery that transforms a threshold graph into one having fewer spanning trees under certain conditions. In this paper, that surgery is shown to create a threshold graph with lower ATR.

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