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k-Component Size Edge Connectivity of a Complete Graph.

A graph is considered operational if it contains one or more components with size at least k , where $1 \leq k \leq |E(G)|$ — $|E(G)|$ is a predetermined threshold value, and is in a failure state if all components have size less than k . The k -component size edge connectivity of a graph G is defined to be the minimum number of edges that must be deleted so that the resulting graph is in a failure state. In the case that G is a tree this parameter is the same as the $(k+1)$ -component order edge connectivity of G . In the case that the graph is the complete graph there is no similar relation between the two parameters. In this talk we describe maximum size failure states for a complete graph. If N is the size of such a failure state, then the k -component size edge connectivity is $C(n,2)-N$. (Received March 20, 2017)