Degree Sequence Theorems for Measures of Connectivity
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Given a finite simple graph $G$, we can define many measures of connectivity. Classic examples include vertex connectivity and edge connectivity. If we consider the minimum number of vertices (resp. edges) that must be removed from $G$ so that the remaining components all have order less than a fixed $k \geq 1$, we get $k$-component order connectivity (resp. $k$-component order edge connectivity). We will begin with a brief survey of existing results that use the degree sequence of a graph to determine a lower bound on its connectivity, edge connectivity, or $k$-component order connectivity. From there, we present new results for $k$-component order edge connectivity. When applicable, we will discuss interesting features, computational complexity, and demonstrate the role extremal graphs play for these theorems.

Keywords: connectivity, component order connectivity, degree sequence, best monotone, extremal graph