

Edge Realizability of Connected Simple Graphs

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We study necessary and sufficient conditions for existence of a simple graph G , and for a simple and connected graph G' with given numbers m_{ij} of edges with end-degrees i, j for $i \leq j \in \{1, 2, \dots, \Delta\}$ where Δ denotes the maximum degree of G or G' . Applications in Mathematical Chemical are to optimization of bound additive topological indices. Algorithms for drawing these graphs are also provided