

REQUIRING THAT MINIMAL SEPARATORS INDUCE COMPLETE MULTIPARTITE SUBGRAPHS

TERRY A. MCKEE

Department of Mathematics and Statistics
Wright State University
Dayton, Ohio 45435 USA

e-mail: terry.mckee@wright.edu

Abstract

Complete multipartite graphs range from complete graphs (with every partite set a singleton) to edgeless graphs (with a unique partite set). Requiring minimal separators to all induce one or the other of these extremes characterizes, respectively, the classical chordal graphs and the emergent unichord-free graphs. New theorems characterize several subclasses of the graphs whose minimal separators induce complete multipartite subgraphs, in particular the graphs that are 2-clique sums of complete, cycle, wheel, and octahedron graphs.

Keywords: minimal separator, complete multipartite graph, chordal graph, unichord-free graph.

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