

STRONGLY UNICHORD-FREE GRAPHS

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Abstract

Several recent papers have investigated unichord-free graphs—the graphs in which no cycle has a unique chord. This paper proposes a concept of strongly unichord-free graph, defined by being unichord-free with no cycle of length 5 or more having exactly two chords. In spite of its overly simplistic look, this can be regarded as a natural strengthening of unichord-free graphs—not just the next step in a sequence of strengthenings—and it has a variety of characterizations. For instance, a 2-connected graph is strongly unichord-free if and only if it is complete bipartite or complete or “minimally 2-connected” (defined as being 2-connected such that deleting arbitrary edges always leaves non-2-connected subgraphs).

Keywords: unichord-free graph, strongly chordal graph.

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