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DUALIZING DISTANCE-HEREDITARY GRAPHS

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Abstract

Distance-hereditary graphs can be characterized by every cycle of length at least 5 having crossing chords. This makes distance-hereditary graphs susceptible to dualizing, using the common extension of geometric face/vertex planar graph duality to cycle/cutset duality as in abstract matroidal duality. The resulting "DH* graphs" are characterized and then analyzed in terms of connectivity. These results are used in a special case of plane-embedded graphs to justify viewing DH* graphs as the duals of distance-hereditary graphs.

Keywords: distance-hereditary graph, dual graph, graph duality.

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