

CHARACTERIZING AND RECOGNIZING NORMAL HELLY CIRCULAR-ARC GRAPHS

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In this work, we study the intersection graphs of finite sets of arcs on a circle no three of which cover the circle, known as normal Helly circular-arc graphs. Those circular-arc graphs which are minimal forbidden induced subgraphs for the class of normal Helly circular-arc graphs were identified by Lin, Soulignac, and Szwarcfiter, who also posed the problems of determining the remaining minimal forbidden induced subgraphs and finding a direct recognition algorithm. In this work, we solve their problems, obtaining the complete list of minimal forbidden induced subgraphs for the class of normal Helly circular-arc graphs, and presenting a direct recognition algorithm which also finds, in linear time, when the input is a normal Helly circular-arc graph, a minimal forbidden induced subgraph as certificate.

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