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Unit disk graphs. (English) Zbl 0739.05079

Discrete Math. 86, No. 1-3, 165-177 (1990).

Any given n points in the plane form the vertices of some graph by the convention that distinct points are adjacent whenever their distance is at most 2. The resulting graph is called a unit disk graph, since it is the intersection graph of the unit disks around the given n points.

It is shown that certain hard decision problems remain NP-complete when restricted to unit disk graphs, even when the position of the points is given. These problems are CHROMATIC NUMBER, INDEPENDENT SET, and several others.

On the other hand, a maximum cardinality clique in unit disk graphs can be found in polynomial time when the position of the points is given.

Reviewer: [E.Prisner \(Hamburg\)](#)

MSC:

05C85 Graph algorithms (graph-theoretic aspects)

05C99 Graph theory

Cited in **2** Reviews
Cited in **170** Documents

Keywords:

[algorithms](#); [points in the plane](#); [unit disk graph](#); [intersection graph](#)

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