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Recognizing Circle Graphs

A circle graph is the intersection graph of chords on a circle. There is a correspondence between bipartite circle graphs and planar graphs, and hence every characterization for the class of circle graphs gives a characterization for the class of planar graphs.

Given a graph, Naji describes a system of linear equations whose solvability determines whether or not the graph is a circle graph. We will sketch a new proof of this beautiful theorem which is considerably simpler than the existing proofs due to Naji, Gasse, and Traldi.

This is joint work with Jim Geelen.