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*Graph searches and cocomparability graphs*

In this talk we study how graph searching on a cocomparability graph  $G$  can be used to produce cocomp orderings (i.e., orderings that are linear extensions of some transitive orientation of the edges of  $\overline{G}$ ). In particular we present a characterization of the searches that preserve cocomp orderings when used as a "+" sweep. This allow us to build a toolbox of different graph searches and a framework to solve various problems on cocomparability graphs. In particular, we describe a very simple LexDFS based certifying algorithm for maximum independent set.

Joint work with J. Dusart, M. Habib and E. Koehler.