The Structure of Clawfree Graphs. I.

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Abstract. A graph is *clawfree* if no induced subgraph is isomorphic to the complete bipartite subgraph $K_{1,3}$. Clawfree graphs generalize line graphs, and it has been an open question how much more general they are. In joint work with Maria Chudnovsky, we have found a structure theorem which answers this, a complete description of clawfree graphs. We prove they are all built starting from line graphs, circular interval graphs, subgraphs of the Schläfli graph, and a few other basic graphs, by piecing them together in prescribed ways.

The structure of a clawfree graph, and the proof accordingly, depends heavily on the size of the largest stable set in the graph. In this talk we focus on graphs with stable set of size 3, and describe part of the proof for that case.