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Alexandra Ovetsky Fradkin* (aovetsky@math.princeton.edu), Department of Mathematics, Fine Hall, Washington Road, Princeton, NJ 08544-1000, and Maria Chudnovsky (mchudnov@columbia.edu). An approximate version of Hadwiger's conjecture for claw-free graphs.

Hadwiger's conjecture states that if a graph is not t-colorable then it contains the complete graph on t+1 vertices as a minor. The case t=4 is equivalent to the four color theorem and the case t=5 was proved by Robertson, Seymour, and Thomas with the use of the four color theorem. For t>5, the conjecture remains open. Reed and Seymour have also proved that Hadwiger's conjecture holds for line graphs and in a recent work with Maria Chudnovsky we proved that Hadwiger's conjecture holds for a proper superset of the class of line graphs, known as the class of quasi-line graphs (graphs where the neighbor set of every vertex is the union of two cliques).

A graph is claw-free if it does not have a vertex with three pairwise nonadjacent neighbors. The class of claw-free graphs is a proper superset of the class of quasi-line graphs. In this talk I will outline the proof of a weakened version of Hadwiger's conjecture for claw-free graphs. The proof uses a structure theorem from a recent work of Chudnovsky and Seymour. At the end of the talk I will discuss the progress that has been made on the actual Hadwiger's conjecture for claw-free graphs. This is a joint work with Maria Chudnovsky. (Received September 06, 2008)