The extremal function for K_9 minors

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Abstract. A graph H is a minor of a graph G if H can be obtained from a subgraph of G by contracting edges. We prove that every simple graph on n vertices and at least 7n-27 edges either has a K_9 minor, or is isomorphic to $K_{2,2,2,3,3}$, or is isomorphic to a graph obtained from disjoint copies of $K_{1,2,2,2,2,2}$ by identifying cliques of size six.