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Further progress towards Hadwiger's conjecture

In 1943, Hadwiger conjectured that every graph with no K_t minor is $(t-1)$-colorable for every $t \geq 1$. In the 1980s, Kostochka and Thomason independently proved that every graph with no K_t minor has average degree $O(t\sqrt{\log t})$ and hence is $O(t\sqrt{\log t})$-colorable. Recently, Norin, Song and I showed that every graph with no K_t minor is $O(t(\log t)^\beta)$-colorable for every $\beta > 1/4$, making the first improvement on the order of magnitude of the $O(t\sqrt{\log t})$ bound. Here we show that every graph with no K_t minor is $O(t(\log t)^\beta)$-colorable for every $\beta > 0$; more specifically, they are $O(t(\log \log t)^6)$-colorable.