

Grid Ramsey problem and related questions

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(joint work with Asif Jamshed)

In 1974, Paul Seymour conjectured that any graph G of order n and minimum degree at least $\frac{k}{k+1}n$ contains the k th power of a Hamiltonian cycle. This conjecture was proved with the help of the Regularity Lemma for $n \geq n_0$ where n_0 is very large. Here we present another proof that avoids the use of the Regularity Lemma and thus the resulting n_0 is much smaller. The main ingredient is a new kind of connecting lemma.