

# Turán number of blow-ups of trees

Andrzej Grzesik

A conjecture of Erdős from 1967 asserts that any graph on  $n$  vertices which does not contain a fixed  $r$ -degenerate bipartite graph  $F$  has at most  $Cn^{2-1/r}$  edges, where  $C$  is a constant depending only on  $F$ . We show that this bound holds for a large family of  $r$ -degenerate bipartite graphs, including all  $r$ -degenerate blow-ups of trees. Our results generalise many previously proven cases of the Erdős conjecture, including the related results of Füredi and Alon, Krivelevich and Sudakov. The proof uses supersaturation and a random walk on an auxiliary graph.

Joint work with Oliver Janzer and Zoltán Lóránt Nagy.