



SEMINARIUM
MATEMATYKA DYSKRETNA

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On Connected Turán Problems in Bipartite Graphs and Their Applications

Nika Salia

Uniwersytet Jagielloński

(co-authors: Zhen He and Xiutao Zhu)

We determine the exact extremal numbers and the structure of extremal graphs for connected bipartite graphs with fixed color-class sizes that avoid long paths. The proof relies on a structural characterization of 2-connected bipartite graphs without long cycles, combining Kopylov's method with a strengthened Jackson lemma.

Applications include concise proofs of classical results of Gyárfás–Rousseau–Schelp and Jackson on bipartite Turán numbers.