

Paweł Rafał Bieliński

Warsaw University of Technology

MWIS IN HEREDITARY CLASSES OF ORDERED GRAPHS

Maximum Weight Independent Sets is among the fundamental algorithmic problems in graph theory. We consider its complexity in the classes of ordered graphs that exclude a single ordered graph as an induced subgraph. In particular, we manage to extract significant algorithmic advantage by excluding any one of the three possible permutations of $2K_2$, and likewise for P_3 and K_2 . On the other hand, we obtain NP-hardness results for any meaningfully larger forbidden induced subgraph. In the end, we formulate a near-complete complexity dichotomy.