SEMINARIUM MATEMATYKA DYSKRETNA

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3-colourability and subdivided claws

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A natural way of increasing our understanding of NP-complete graph colouring problems is to restrict the input to a special graph class. Classes of H-free graphs, that is, graphs that do not contain some graph H as an induced subgraph, have proven to be an ideal testbed for such a complexity study. However, if the forbidden graph H contains a cycle or claw, then these problems often stay NP-complete. In this talk, we survey recent complexity studies on k-COLOURING in classes of graphs defined by forbidden induced subdivided claws and show that we may still obtain tractable results for 3-COLOURING if we also bound the diameter of the H-free input graph.