

Speaker: Eva Jelínková

Affiliation: Charles University in Prague

Title: Forbidden Induced Subgraphs for Graph Classes in Seidel's Switching

Abstract: Seidel's switching is a graph operation which makes a given vertex adjacent to precisely those vertices to which it was non-adjacent before, while keeping the rest of the graph unchanged. Two graphs are called switching-equivalent if one can be made isomorphic to the other by a sequence of switches. A graph property is called hereditary if it is closed on taking induced subgraphs.

We focus on classes of graphs that are switching-equivalent to graphs with a certain hereditary property. For each such class C there exists a class $F(C)$ of minimal forbidden induced subgraphs. Characterizations by $F(C)$ are known for some classes, such as the finite set $F(C)$ for graphs switching-equivalent to P_4 -free graphs, and the infinite $F(C)$ for graphs switching-equivalent to acyclic graphs.

We present a characterization of graphs switching-equivalent to $K_{1,2}$ -free graphs by $F(C)$ containing ten graphs, each having five vertices. We also describe the infinite $F(C)$ for graphs switching-equivalent to forests of bounded vertex degrees.

This is joint work with Jan Kratochvíl, Department of Applied Mathematics, Charles University, Prague, Czech Republic.