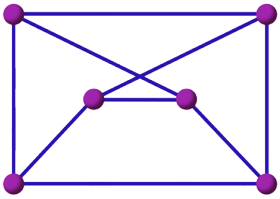

SEMINARIUM
MATEMATYKA DYSKRETNA

wtorek, 12 marca 2024 r., godz. 12:30, s. 612 C7

List distinguishing index of graphs

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We say that an edge-colouring *breaks* an automorphism if some edge is mapped to an edge of another colour. We call a colouring *distinguishing* if it breaks all non-trivial automorphisms of a graph. We are interested in the list version of the problem. Let G be a graph, and $\{L(e)\colon e \in E(G)\}$ be a set of lists of colours for edges of G, each of length k. The least cardinal number k such that G has a distinguishing colouring from any set of lists $\{L(e)\colon e \in E(G)\}$ of length k is called the *list distinguishing index* of G. We prove that each connected finite or infinite graph G with $\Delta(G) \geqslant 3$ has the list distinguishing number at most $\Delta(G) - 1$ unless it is a symmetric or a bisymmetric tree. This bound is optimal for every possible $\Delta(G)$ and it matches the known bound for the non-list version.

This is joint work with Jakub Kwaśny.