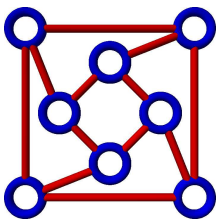

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Symmetric cages (Symetrické klietky)

Róbert Jajcay

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A (k, g)-cage is a smallest k-regular graph of girth g. Finding a (k, g)-cage for given parameters k and g is thus an optimization problem in which one looks for an extremal graph in an infinite search space of all k-regular graphs of girth g. The search for cages started in earnest in the 1960's, but turned out to be too hard in general, and has only recently been revived due to the introduction of algebraic and topological methods in the area. In our talk, we present an overview of the contributions stemming of the use of Cayley and vertex-transitive graphs as well as some recent results concerning the restriction of the original cage problem to these two classes of symmetric graphs. The talk is aimed at general mathematical audience including students.

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