

## Upper bounds for the order of cages

A  $(k, g)$ -graph is a simple undirected  $k$ -regular graph with girth  $g$ . A  $(k, g)$ -cage is a  $(k, g)$ -graph with the least possible number of vertices. Cages have been studied quite intensively yet for most pairs  $(k, g)$  the corresponding cages are still unknown.

There is an obvious lower bound on the order of a  $(k, g)$ -cage, called the Moore bound (i.e., the number of vertices needed for a  $(k, g)$ -cage). There are several constructions for the upper bound for it, but often the upper bound is relatively far from the Moore bound.

In the talk I will discuss known upper bounds together with a new method for shortening the gap between the Moore bound and an upper bound on the order of a  $(k, g)$ -cage.

**Primary author:** Dr ZEM LJIC, Sara Sabrina (Comenius University Bratislava)

**Co-author:** Prof. JAJCAY, Robert (Comenius University, Bratislava, and University of Primorska, Koper)

**Presenter:** Dr ZEM LJIC, Sara Sabrina (Comenius University Bratislava)