

# Orbit matrices and strongly regular graphs

D. Crnković, M. Maksimović

*Faculty of Mathematics, University of Rijeka*

We will talk about the construction of orbit matrices of strongly regular graphs admitting an automorphism group of composite order. This method is a generalisation of the work of C. Lam and M. Behbahani, who in 2011 presented an algorithm for constructing orbit matrices of strongly regular graphs with an assumed prime order automorphism group. From orbit matrices we will construct codes and strongly regular graphs. We give a classification of strongly regular graphs with parameters  $(49,18,7,6)$  having an automorphism of order six, and talk about the nonexistence of strongly regular graphs with parameters  $(99,14,1,2)$  that have a certain automorphism group.