## Minicourse II: Symmetries in Graphs with Python and Sage

Lecturer:
Tomaz Pisanski
*University of Ljubljana, Ljubljana, Slovenia*
*University of Primorska, Koper, Slovenia*

In this course we will learn basics of Python and Sage that will enable participants to start exploring non-trivial questions about symmetries of graphs. We will construct some bi-Cayley graphs, such as Haar graphs, rose-window graphs, $I$-graphs and their generalizations. We will also analyze some existing censuses of graphs and related structures, such as maps and polytopes.

Each participant is expected to posses basic skills of computer programming and have his or her own lap-top available.

Each registered participant will receive a handout, including relevant references and tutorials, prior to the beginning of this minicourse.

A list of questions, ranging from simple exercises that will enable participants to recall the learned skills, to non-trivial mathematical problems will be distributed.

The course contains 4 lectures.

This course is organized in the frame of the international cooperation between Slovenia and Russia in 2014-2015.