

The topologist's snowflake and the rose: Cayley graphs in covering space theory

Gabriel Angelini-Knoll

November 8, 2013

In covering space theory, we look at certain kinds of maps from one space to another where one space acts as a cover of the other in a particular way. We can assign an algebraic invariant called the fundamental group to the space and to the different coverings of the space. The fundamental theorem of covering space theory tells us that there is a correspondence between the different covers of the space and the different subgroups of the fundamental group of the space. In my talk, I will work through one particular example where we see that the “topologist’s snowflake” is the universal cover of a “rose.” I will begin with brief definitions of necessary terms and focus more on conceptual ideas than explicit proofs. There is no prerequisite and all are welcome.