Seminarium geometrów

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Exponential equations
in acylindrically hyperbolic groups Part 2

Abstract: Let G be a group and E be an equation of the form

$$a_1 g_1^{x_{i_1}} a_2 g_2^{x_{i_2}} \ldots a_n g_n^{x_{i_n}} = 1,$$

where $a_1, g_1, \ldots, a_n, g_n$ are elements from G (called *coefficients*) and $x_{i_1}, \ldots, x_{i_n} \in X$ are *variables* (which take values in $\mathbb{Z}$). We call E the *exponential equation* over the group G.

In the joint paper [1] we study solutions of such equations over groups acting acylindrically on a hyperbolic space. We show that E is equivalent to a finite disjunction of finite systems of pairwise independent equations which are either loxodromic over virtually cyclic subgroups or elliptic, and we obtain a description of the solution set of E. We provide some stronger results in the case of G being hyperbolic relative to a collection of peripheral subgroups $\{H_\lambda\}_{\lambda \in \Lambda}$. We also give a linear estimate on the length of possible minimal solution in the loxodromic case.

In the first lecture on 17.04, Agnieszka will give some background and motivation for this study and introduce main notions and concepts used in the proofs. In the second lecture on 18.04, Oleg will give detailed proofs of main theorems.

Reference

[1] Bier Agnieszka, Bogopolski Oleg, Ęxponential equations in acylindrically hyperbolic groups", to appear

streaming via ZOOM:

Meeting ID: 967 6507 7409

Meeting password: "GS"(two letters) followed by the Euler characteristic of the closed orientable surface of genus 89.