

Seminarium geometrów

www.math.uni.wroc.pl/dgt/

Wtorek, 05.04.2021, 14:15, webminar

Oleg Bogopolski (Dusseldorf University)

Exponential equations in groups

Abstract: An exponential equation over a group G is an equation of kind

$$u_1 g_1^{x_1} \dots u_n g_n^{x_n} = 1,$$

where u_i, g_i are given elements of G and x_i are variables with possible values in \mathbb{Z} .

– In the joint paper with A. Bier we show, in particular, that if G is acylindrically hyperbolic and all g_i are loxodromic, then the norm of a minimal “solution” of such equation can be linearly bounded in terms of lengths of its coefficients u_i, g_i .

– We deduce that, under some general assumption, exponential equations in relatively hyperbolic groups can be linearly reduced to those in peripheral subgroups.

– In the joint paper with A. Iwanow we show that there exists a finitely presented group G such that there is an algorithm solving exponential equations with one variable over G and there is no algorithm solving exponential equations with two variables over G . In my talk I will sketch the proofs of these and related results. Furthermore, I will give an account of results and problems in this area.

ZOOM meeting info:

Meeting ID: 967 6507 7409

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