

Seminarium geometrów

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Wtorek, 26.04.2022, 14:15, webinar, ZOOM meeting

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Non-discrete, conjugation-invariant norms on SL_n and their rigidity

Abstract: Conjugation-invariant norms on groups have been studied by various researchers beginning with a paper by Burago, Ivanov and Polterovich in 2007. Many of the groups studied early on turned out to only allow for very restricted examples of such norms, essentially discrete norms with finite diameter. One of the examples, which a priori allows for more complicated norms are arithmetic groups like $SL_n(\mathbb{Z})$, particularly those arising from split algebraic groups. Previous investigations of norms on such arithmetic groups mostly focused on discrete, conjugation-invariant norms and the size of their corresponding diameters. In this talk, I will first describe some results by Polterovich, Shalom and Shem-Tov and myself concerning non-discrete, conjugation-invariant norms on $SL_n(R)$ for certain rings R : These norms on $SL_n(R)$ are also very restricted. In fact, the conjugation-invariant norms always have profinite norm completions. This is referred to as $SL_n(R)$ satisfying the *dichotomy property*. A common but very strong assumption in the study of the dichotomy property of $SL_n(R)$ is bounded generation. In the second part of the talk, I will however present recent results by Benjamin Martin and myself, which show (among else) that bounded generation is not actually needed for the study of non-discrete, conjugation-invariant norms on $SL_n(R)$ at all. In this context and if time allows, I will also present some conjectures and open problems related to this result at the end of the talk.

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.