Seminarium geometrów

Wtorek, 21.06.2022, 14:15 Seminar

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Elementary bounded generation for Chevalley groups over global function fields and some applications

Abstract: Bounded generation (and elementary bounded generation) are essentially the ability to write each element of a given group as products with factors from a finite collection of śimpleśubgroups of the group in question and with a uniform bound on the number of factors needed. These somewhat technical properties were initially introduced in the study of the congruence subgroup property of arithmetic groups, but they traditionally also found applications in the representation theory of these groups, their subgroup growth and Kazdhan's Property (T). Recently however, there has been renewed interest in these properties from the area of geometric group theory as bounded elementary generation appears naturally as a technical assumption in various results studying arithmetic groups ranging from the study of conjugation-invariant norms on, say, SL_n as well as in the study of the first-order theories of arithmetic groups. Classical results in this area were usually concerned with groups arising from number fields though and somewhat surprisingly there are few such results for groups arising from global function fields. In this talk, I will give a short introduction to the history of bounded generation and then present a general elementary bounded generation result for split Chevalley groups arising from global function fields together with some applications if time allows. The main result presented is obtained by adapting model-theoretic methods developed by Carter-Keller-Paige and first presented by Dave Witte-Morris to the global function field setup.

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