

Seminarium geometrów

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Igusa zeta function, its topological and motivic version and a connection with elliptic genus

Abstract: Let $K = \mathbb{Q}_p$. For a polynomial function $f : K^n \rightarrow K$ the zeta function is defined by the integral $Z(f, s) = \int_{\mathbb{Z}^n} |f(x)|^s dx$, where $|f(x)|$ denotes the p -adic norm. Igusa proved, that the zeta function is rational in p^s . In good cases, (when there is a good reduction to the residual field \mathbb{F}_p) there can be given a compact formula for the zeta function in terms of the resolution of singularities (Denef formula), counting the points in the strata of the resolution. There is a topological analogue: instead of counting points over \mathbb{F}_p we apply Euler characteristic, or any other motivic invariant. The topological and motivic zeta function is defined in this way. There is a global version, where K^n is replaced by a smooth manifold and the function is replaced by a divisor. I'll show how to obtain the global zeta function as a degeneration of the elliptic genus, which was defined by Borisov and Libgober for singular pairs.

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.