

# Seminarium geometrów

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Marcin Kotowski (University of Toronto)

## Random Schroedinger operators with applications to Novikov-Shubin invariants

Abstract: For a finitely generated group  $G$  and a group ring element  $T$ , the Novikov-Shubin invariant of  $T$  is a topological invariant related to the spectral measure of  $T$ . We will consider lamplighter groups  $Z_2 \wr Z$  and lattices in Sol group  $Z^2 \rtimes Z$ , and show examples of group ring elements with Novikov-Shubin invariants equal to zero. In particular, this provides a simple finitely presented counterexample to the Lott-Lueck conjecture about positivity of Novikov-Shubin invariants. The main computational tool comes from the theory of random Schroedinger operators. Joint work with Balint Virag.

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Pasha Zusmanovich (University of Ostrava)

## Commutative Lie algebras

Abstract: I will discuss various questions related to the class of "commutative Lie algebras", i.e. commutative algebras satisfying the Jacobi identity. These algebras combine, in a curious manner, properties of Lie and Jordan algebras. In characteristic 2, however, the picture is entirely different: this class generalizes Lie algebras and possess an interesting cohomology theory.