SEMINARIUM UKŁADY DYNAMICZNE

Tytuł: **Invariant measures of shift spaces generated by rational subset of integers**
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Given a subset A of integers we may identify the characteristic function c_A of A with a point in the full shift space of infinite 0-1 sequences. The closure of the orbit of c_A with respect to the left-shift operator leads to a symbolic dynamical system, whose dynamical properties depend on combinatorial properties of A. This approach goes back at least to Furstenberg.

Recently, Sarnak proposed to study square-free integers through dynamics of the shift space constructed in the above way.

El Abdalauoi-Lemanczyk-De La Rue and Bartnicka-Kasjan-Kułaga-Przymus-Lemańczyk extended Sarnak's approach and studied B-free integers generated by arbitrary subset of integers. Recall that an integer is B-free if it has no factor in B. Note that square free integers are generated by $B_s q = \{p^2 : p \text{ prime}\}$.

These shift spaces and their higher dimensional analogs attracted recently much attention.

During my talk I will describe a new approach to a related class of systems generated by rational subsets of integers. This class includes B-free shifts generated by sets B possessing an asymptotic density. A set B is rational if it can be arbitrary well approximated with respect to the upper asymptotic density by finite unions of arithmetic progressions. We study invariant measures of these systems and study their entropy. (This is a joint work with Jakub Konieczny and Michal Kupsa.)