Algebraic Dynamics: Entropy on LCA Groups

Talk for the IMAC Semester on Dynamical Systems

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In the first part of the talk some basic properties of a new kind of Algebraic Entropy is discussed. In particular we present a precise formulae to compute the Algebraic Entropy of the endomorphisms of $\mathbb{Z}^n$, $\mathbb{R}^n$ and $\mathbb{C}^n$, and we prove that this entropy is preserved by duality. In the second part of the talk we will concentrate on morphisms of discrete Abelian groups. In this more restricted context, the algebraic entropy is very well understood, in particular we are able to characterize it as the unique function satisfying five axioms in a similar way to the characterization obtained by Bowen for the topological entropy on compact groups.