Mean Value Theorems in Multiplicative Systems

April 5, 2024

Abstract

In this talk we will discuss about additive ergodic averages in finitely generated multiplicative systems as well as about the dynamical behaviour of such systems with respect to additive averages. We will prove a mean ergodic theorem that generalises Halász's mean value theorem for finitely generated multiplicative functions taking values in the unit circle.

If time permits, we will discuss about some structural theorems in the above mentioned systems and we will present some results on joint ergodicity of additive and finitely generated multiplicative actions along with the corresponding combinatorial applications.