

# COMPLEXITY AND ENTROPY OF COUNTABLE AMENABEL GROUPS ACTIONS

## Abstract

We consider an ergodic measure-preserving action  $T$  of a countable amenable group  $G$  on a standard probability space  $(X, M, \mu)$ . To a individual trajectory  $\{T_g x\}_{g \in G}$  of some point  $x \in X$  we put a correspondence a non-negative real number characterizing a degree (power) of complexity of a behaviour of this trajectory which is called as a trajectorial complexity of the point and investigate a connection of this notion with an entropy  $h(T)$  of the action  $T$  with related to measure  $\mu$ . Our goal is to demonstrate what is known for actions of  $Z$  that the trajectorial complexities of  $\mu$ -a.e. points of  $X$  coincide with the entropy of action  $T$ .