1150-03-330 **Konstantinos A. Beros*** (berosk@miamioh.edu). *Dynamics and definable complexity.*

Given a function $T : X \to X$ on a topological space X it is natural to study the set of $x \in X$ such that the forward orbit

$$\{T^n(x) : n \in \mathbb{N}\}$$

of x under T has some specified property. For instance, one might study the set of $x \in X$ such that the forward orbit of x is dense in X.

In my talk, I will consider two particular cases of this general setup in the context of definable complexity. First, I will discuss a result of mine from 2015 where I show that the set of $x \in [0, 1]$ which are normal of order precisely n (for any fixed $n \in \mathbb{N}$) is Wadge-complete for the class of differences of $\mathbf{\Pi}^3_0$ sets. Second, I will discuss a recent result (joint with Paul B. Larson), where we show that the set of hypercyclic vectors for a unilateral weighted shift can be made to have arbitrarily high definable complexity.

I will discuss relevant definitions and give background to motivate these results. (Received July 12, 2019)