1163-11-660 **Mingming Zhang*** (mingmiz@okstate.edu), Stillwater, OK 74074, and **Lucas Pottmeyer** and **Paul Fili**. *Mahler measure and its behavior under iteration.*

For an algebraic number α we denote by $M(\alpha)$ the Mahler measure of α. As $M(\alpha)$ is again an algebraic number (indeed, an algebraic integer), $M(\cdot)$ is a self-map on $\overline{\mathbb{Q}}$, and therefore defines a dynamical system. The *orbit size* of α, denoted $\#\mathcal{O}_M(\alpha)$, is the cardinality of the forward orbit of α under M. In this talk, we will start by introducing the definition of Mahler measure, briefly discuss results on the orbit sizes of algebraic numbers with degree at least 3 and non-unit norm, then we will turn our focus to the behavior of algebraic units, which are of interest in Lehmer's problem. We will mention the results regarding algebraic units of degree 4 and discuss that if α is an algebraic unit of degree $d \geq 5$ such that the Galois group of the Galois closure of $\mathbb{Q}(\alpha)$ contains A_d, then the orbit size must be 1, 2 or ∞. Furthermore, we will show that there exists units with orbit size larger than 2! (Received September 11, 2020)