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**Judy Kennedy Anita Kennedy\*** (kennedy9905@gmail.com), Department of Mathematics, PO Box 10047, Lamar University, Beaumont, TX 77710, and **Van Nall** and **Goran Erceg**. *Dynamics of the shift map on inverse limits with set-valued functions*. Preliminary report.

Suppose  $f : I \rightarrow 2^I$  is an upper semicontinuous bonding map. Let  $M = \varprojlim f = \{(x_0, x_1, \dots) : x_{i-1} \in f(x_i) \text{ for } i > 0\}$ . Even though  $f$  is not even a function in the usual sense, it induces a continuous function  $\sigma$  from  $M$  onto  $M$ . The function  $\sigma$  is called the shift map on  $M$ , since for  $\mathbf{x} = (x_0, x_1, \dots) \in M$ ,  $\sigma(\mathbf{x}) = \sigma(x_0, x_1, \dots) = (x_1, x_2, \dots)$ .  $M$  is called an inverse limit on set-valued functions, or, equivalently, a generalized inverse limit. These objects were introduced in 2003 by W. Mahavier, and they present a new method of understanding the dynamical behavior of set-valued functions.

While much work by many researchers has been done on understanding the topology of these spaces, we are just beginning a study of the dynamical properties exhibited by the shift map  $\sigma$ . While this is very much work in progress, we will discuss properties that imply that the shift map  $\sigma$  has positive topological entropy, topological transitivity, and perhaps other properties.

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