1125-37-1439 **Ryan Broderick*** (broderir@uci.edu). *Finite orbits in random subshifts of finite type.*

In this talk we will discuss an important class of dynamical systems called subshifts of finite type (SFTs), which are used to model other dynamical systems and also extensively studied in their own right. We will describe a method of defining a random SFT, which depends on a parameter α, and discuss a dichotomy in the behavior of a "randomly chosen" SFT for different values of the parameter.

More precisely, given a finite alphabet A, a positive integer n, and a real number $0 < \alpha < 1$, we define a random subset $\omega \subset A^n$ by independently including each element with probability α. We define the associated random SFT X_ω to be the subshift having $A^n \setminus \omega$ as its set of forbidden words. It is known that for $\alpha > 1/|A|$, as $n \to \infty$ the probability that X_ω has positive entropy tends to 1. We discuss a recent result that complements this: For $\alpha < 1/|A|$, the probability that X_ω consists of a single finite orbit tends to 1 as $n \to \infty$. Thus, there is a critical value dividing the parameter space into values for which a random SFT displays high complexity (positive entropy) with high probability and values for which it displays very low complexity (finiteness) with high probability. (Received September 16, 2016)