

Title: Entropy and random walks on random sceneries

Abstract:

Let $X = X_0, X_1, \dots$ be a stationary sequence of random variables defining a sequence space Σ with shift map σ and let (T_t, Ω) be an ergodic flow. Then the endomorphism $\hat{T}_X(x, \omega) = (\sigma(x), T_{x_0}(\omega))$ is known as a random walk on a random scenery. I am interested in when two such transformations can be measure-theoretically isomorphic. Heicklen, Hoffman and Rudolph have proven that within the class of T, T^{-1} endomorphisms (where $X = \{\pm 1\}^{\mathbb{N}}$ with uniform measure and (T, Ω) is an invertible transformation with T^2 ergodic), the entropy of T is an isomorphism invariant. In this talk, I will discuss a generalization of this result to a broader class of random walks on random sceneries.