

1125-39-2387

**Valmir Bucaj\*** (vb11@rice.edu), 6100 Main St. Ms-136, Houston, TX 77005. *On the Kunz-Souillard approach to localization for the discrete one dimensional generalized Anderson model.*

We prove dynamical and spectral localization at all energies for the discrete *generalized Anderson model* via the Kunz-Souillard approach to localization. This is an extension of the original Kunz-Souillard approach to localization for Schrödinger operators, to the case where a single random variable determines the potential on a block of an arbitrary, but fixed, size  $\alpha$ . For this model, we also prove positivity of the Lyapunov exponents at all energies. In fact, we prove a stronger statement where we also allow finitely supported distributions. We also show that for any size  $\alpha$  *generalized Anderson model*, there exists some finitely supported distribution  $\nu$  for which the Lyapunov exponent will vanish for at least one energy. Moreover, restricting to the special case  $\alpha = 1$ , we describe a pleasant consequence of this modified technique to the original Kunz-Souillard approach to localization. In particular, we demonstrate that actually the single operator  $T_1$  is a strict contraction in  $L^2(\mathbb{R})$ , whereas before it was only shown that the second iterate of  $T_1$  is a strict contraction. (Received September 20, 2016)