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)