Clark Musselman* (clark@simons-rock.edu), 84 Alford Rd, Great Barrington, MA 01230, and Jeffrey Schenker (jeffrey@math.msu.edu). Diffusion for Markov Wave Equations.

We consider the long time evolution of solutions to a Schrödinger-type wave equation on a lattice, with a divergence-form, Markov, random generator. We show that solutions to this problem diffuse. That is, the amplitude converges to the solution of a diffusion equation, in the diffusive scaling limit.

Additionally, we expand upon a similar result due to Kang and Schenker for a Markov-Schrödinger wave equation by computing higher moments of position, also in the diffusive scaling limit. (Received September 04, 2012)