1085-82-156   **Bruno Nachtergaele**, **Robert Sims** and **Gunter Stolz*** (`stolz@uab.edu`). *Quantum harmonic oscillator systems with disorder.*

We study many-body properties of quantum harmonic oscillator lattices with disorder. This includes dynamical localization in form of a zero-velocity Lieb-Robinson bound and exponential decay of correlation functions (static and dynamic, at zero temperature as well as at positive temperature). Our results cover finite and infinite oscillator systems. Finally, for some models of disordered oscillator systems which are almost surely gapless, we prove an area law for the averaged bipartite entanglement of ground states and thermal states as measured by the logarithmic negativity. (Received September 07, 2012)