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Alexander Elgart (aelgart@vt.edu), Department of Mathematics, Virginia Tech, Blacksburg, VA 24061, and **Abel Klein*** (aklein@uci.edu), University of California, Irvine, Department of Mathematics, Irvine, CA 92697-3875. *An eigensystem approach to Anderson localization*. Preliminary report.

We introduce a new approach for proving localization (pure point spectrum with exponentially decaying eigenfunctions, dynamical localization) for the Anderson model at high disorder. In contrast to the usual strategy, we do not study finite volume Green's functions. Instead, we perform a multiscale analysis based on finite volume eigensystems. We establish localization of finite volume eigenfunctions with high probability, with the eigenvalues and eigenfunctions labeled by the sites of the box. (Received August 04, 2015)