

1145-81-2812 **John Z. Imbrie*** (imbrie@virginia.edu), Department of Mathematics, P. O. Box 400137,
Charlottesville, VA 22904-4137. *Eigenvalue separation in disordered quantum systems.*

Degeneracies (or near-degeneracies) create difficulties in understanding the behavior of quantum systems. In the case of disordered quantum systems such as the Anderson model, degeneracies provide avenues for long-range tunneling, and hence are a barrier to localization. I will discuss a method (the energy-following procedure) for tracking eigenvalues of the Anderson model Hamiltonian through a sequence of successive approximations. The rate at which eigenvalues separate in this procedure controls the statistics of separation of nearby eigenvalues. The method is a key part of the proof of localization for discrete disorder distributions. (Received September 25, 2018)