SimonFest
California Institute of Technology
March 27 – 31, 2006

Lyapunov Exponents and Spectral Analysis of Ergodic Schrödinger Operators

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Abstract. The spectral analysis of an ergodic family of one-dimensional Schrödinger operators typically starts out with an investigation of the Lyapunov exponent of the associated energy-indexed Schrödinger cocycle over the given ergodic transformation. For example, the absolutely continuous spectrum is given by the essential closure of the set of energies for which the Lyapunov exponent vanishes. We review some general results in this context, particularly Kotani theory, and their application to concrete models.