On the Formation of Gaps in the Spectrum of Schrödinger Operators with Quasi-Periodic Potentials

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Abstract. We will review some work by Michael Goldstein and the speaker on the formation of gaps in the spectrum of operators with quasi-periodic potentials defined by the shift on the circle. We will assume only positive Lyapunov exponents and results will be obtained for almost every value of the angle of the shift. The methods will involve large deviation theorems, the avalanche principle, as well as resultants. Particular emphasis will be given to a quantitative separation property of the eigenvalues.