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Silvius Klein* (kleins@ias.edu), 1 Einstein Drive, Princeton, NJ 08540. *Positivity of the Lyapunov exponent for the multi-frequency model with generic smooth potential.* Preliminary report.

We consider the discrete, one dimensional, quasi-periodic Schrodinger operator with potential defined by a smooth function and dynamics given by a multi-frequency rotation on the higher dimensional torus. Using a method of variation of the potential and elimination of multiple resonances introduced by Jackson Chan for the single frequency model, we prove the following result. Assuming a large coupling constant, for most (in a measure theoretical sense) perturbations of the potential and for most frequencies, the corresponding Schrodinger operator has positive Lyapunov exponent for all energies. (Received March 05, 2006)