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Svetlana Jitomirskaya (szhitomi@math.uci.edu), Irvine, CA , and **Shiwen Zhang*** (shiwez1@uci.edu), Irvine, CA. *Lower quantum dynamical bounds and arithmetic criterion of full spectral dimensionality for analytic quasi-periodic Schrödinger operators.*

We will present a purely arithmetic criterion of full spectral dimensionality for discrete analytic quasi-periodic Schrödinger operators in the positive Lyapunov exponent regime. The lower bound estimate for spectral dimension works for general Schrödinger operators with potentials that are exponentially close to periodic ones. This leads to a number of applications to quantum transport and fractal dimensional properties, including arithmetic conditions for quasi-ballistic motion of critical almost Mathieu operators, Sturmian Hamiltonians. (Received September 16, 2015)