1154-47-2000 **Ilya Kachkovskiy*** (ikachkov@msu.edu), Department of Mathematics, Wells Hall, 619 Red Cedar Rd, East Lansing, MI 48824. *Ballistic transport for one-frequency Schrodinger operators.* Preliminary report.

Let $H(x)$ be a family of quasiperiodic operators on $\ell^2(\mathbb{Z})$:

$$(H(x)\psi)(n) = \psi(n+1) + \psi(n-1) + \varepsilon v(x+n\omega)\psi(n).$$

Suppose $v \in C^\omega(\mathbb{T})$ is an analytic 1-periodic function. Then, for $0 < \varepsilon < \varepsilon_0(v)$ and for Diophantine irrational ω, the operators $H(x)$ satisfy strong ballistic transport. In other words, let

$$X\psi(n) = n\psi(n)$$

be the coordinate operator, and consider its quantum evolution:

$$X(T) = e^{iH(x)T} X e^{-iH(x)T}.$$

Then the following strong limit exists (on a dense set):

$$\text{s-}\lim_{T\to\infty} \frac{1}{T} X(T) = Q,$$

and the operator Q has trivial kernel. Previous results in this area either require choosing a subsequence of time scales, or establish ballistic lower norm bounds without strong convergence. (Received September 17, 2019)