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Giorgio Young* (gfy@rice.edu). *Ballistic transport for limit-periodic continuum Schrödinger operators in one dimension.*

In this talk, we will discuss our recent results on the transport properties of the class of limit-periodic continuum Schrödinger operators whose potentials are approximated exponentially quickly by a sequence of periodic functions. For such an operator H and $X_H(t)$ the Heisenberg evolution of the position operator, we show the limit of $\frac{1}{t}X_H(t)\psi$ as $t \rightarrow \infty$ exists and is nonzero for $\psi \neq 0$ belonging to a large subspace of initial states suitably localized in position and momentum. This statement has been characterized as a particularly strong form of ballistic transport and this is the first time it has been proven in the continuum almost periodic non-periodic setting. In particular, this statement implies that for the initial states considered, the second moment grows quadratically in time. (Received September 21, 2021)