1167-37-224          **Artur Avila**, **David Damanik** and **Zhenghe Zhang*** (`zhenghe.zhang@ucr.edu`). *Positivity of the Lyapunov exponent for potentials generated by hyperbolic transformations.*

In this talk, I will introduce a recent work in showing positivity of the Lyapunov exponent for Schrödinger operators with potentials generated by hyperbolic dynamics. Specifically, we showed that if the base dynamics is a subshift of finite type with an ergodic measure admitting a local product structure and if it has a fixed point, then for all nonconstant Hölder continuous potentials, the set of energies with zero Lyapunov exponent is a discrete set. If the potentials are locally constant or globally fiber bunched, then the set of zero Lyapunov exponent is finite. We also showed that for generic such potentials, we have full positivity in the general case and uniform postivity in the special cases. Such hyperbolic dynamics include expanding maps such as the doubling map on the unit circle, or Anosov diffeomorphism such as the Arnold's Cat map on 2-dimensional torus. It also can be applied to Markov chains whose special cases include the i.i.d. random variable. This is a joint with A. Avila and D. Damanik. (Received March 08, 2021)