



The rising STAR of Texas

Differential Equations and Applied Math Seminar

Dr. Rodrigo Matos, Texas A&M

11am-12pm April 2nd, 2021

Zoom

Title: Dynamical contrast on highly correlated Anderson-type models

Abstract: We study examples of discrete random Schrödinger operators with strongly correlated potentials. Depending on the geometry of the underlying graph, the dynamical and spectral properties of the models can change significantly. Indeed the "vertical" model introduced in the talk exhibits a purely absolutely continuous spectrum and ballistic lower bound, up to a logarithmic correction, for the time averaged second moments of the position operator. Furthermore, its absolutely continuous spectrum splits into a transient and a recurrent component, in the sense of Avron and Simon. On the other hand, the second model presented, the "diagonal" model, exhibits logarithmic upper bounds for the time-averaged second moments of the position operator and vanishing packing dimension for its spectral measures. If time allows, tools related to harmonic analysis, including a version of Boole's equality, will be discussed. Based on joint work with Rajinder Mavi and Jeffrey Schenker.

Interested faculty and graduate students are encouraged to attend.