Department of Mathematics

University of Houston

Analysis Seminar

FRIDAY, October 13, 2017

13:00-14:00 - Room 646 PGH

Speaker: Jon Harrison (Baylor University)

Title: Spectral properties of quantum graphs via pseudo orbits

Abstract: Quantum graphs provide a model for spectral phenomena associated with quantum chaos, Anderson localization or the properties of graphene, for example. The spectrum of a quantum graph can be encoded in only a finite collection of primitive pseudo orbits (sets of periodic orbits) which include at most half of the edges in the graph. For q-nary graphs primitive periodic orbits can be labeled by Lyndon words on an alphabet of q letters, these are words that are strictly smaller in lexicographic order than their rotations. Evaluating spectral properties of these graphs leads to a new problem in combinatorics, to count strictly decreasing Lyndon word decompositions.