Visiting day mini-talks

Prof. Wilhelm Schlag (10.10-10.40 in 809B): *Spectral theory and applications to nonlinear PDEs*

Prof. Hee Oh (10.50-11.20 in 809B): *Apollonian circle packings: counting and closure*

Sam Panitch (2-2.30 in 801): *An introduction to the volume conjecture*

Abstract: The volume conjecture suggests a surprising connection between quantum invariants of knots and the hyperbolic geometry of their complements. In this talk, we will briefly introduce the ingredients necessary to understand the statement of the volume conjecture as well as its proof in some specific examples. This includes a broad range of tools across geometry, topology, and analysis, including the Jones polynomial and its colored generalizations, the hyperbolic geometry of ideally triangulated 3-manifolds, and saddle point approximations of integrals.

Reuben Drogin (2.30-3 in 801): *Anderson Localization and the Metal-insulator Transition*

Abstract: In 1958 Philip Anderson predicted that the presence of disorder in a metal or crystal could turn it from a conductor to an insulator. This phenomenon goes beyond the propagation of electrons and appears wherever waves propagate through disordered media. In this talk we will introduce this idea and explore some quantum and classical situations in which it can be observed.