

abstract

Computer Science/Discrete Mathematics Seminar II
Topic:

Speaker:

Affiliation:

Date:

Time/Room:

We present a unified approach to various topics in mathematics including: Ergodic theory, graph limit theory, hypergraph regularity, and Higher order Fourier analysis. The main theme is that very large complicated structures can be treated as approximations of infinite measurable and topological objects. In the limit interesting algebraic structures and new concepts arise which are hard to capture in the finite language but they govern the behavior of the finite objects. A prominent example is the inverse theorem for the Gowers norms on arbitrary abelian groups. As a tool we use non-standard integral and measure theory which provides a convenient framework for all these problems.