

abstract

ARITHMETIC COMBINATORICS

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

An important theme in arithmetic combinatorics, which is closely related to the ergodic-theoretic project of understanding characteristic factors, is higher-order Fourier analysis. It has been well known for a long time that various norms defined in terms of Fourier transforms provide useful measures of quasirandomness. One of these, the L_4 -norm, also has a convenient description in physical space. This definition turns out to have natural and useful higher-order generalizations, but it is a highly non-trivial project to find corresponding generalizations of the Fourier description. However, there are strong indications of what a such a theory should look like, and the first case, quadratic Fourier analysis, has reached a stage where it can be usefully applied to many problems that do not appear to be soluble without it. I shall give an outline of the theory and discuss a recent application of this kind.