

abstract

Joint IAS-PU Number Theory Seminar
Topic:

Speaker:

Affiliation:

Date:

Time/Room:

This talk will be about some new tools based on model theory that could be useful in the study of harmonic analysis on reductive p -adic groups. In 2008, R. Cluckers and F. Loeser defined the class of the so-called "constructible motivic exponential functions". These functions specialize to fairly general functions on p -adic fields; the theory of motivic integration for such functions specializes to the classical p -adic integration when p is sufficiently large. I will talk about the recent joint work with R. Cluckers and I. Halupczok, where we explore the delicate properties of constructible functions, such as integrability and boundedness. This leads to the "transfer of integrability principle" (which, in a sense, can be thought of as a long-reaching extension of the Ax-Kochen-Ersov principle). I will also talk about the applications of this transfer principle to two questions in harmonic analysis on p -adic groups: getting uniform in p bounds for orbital integrals, and local integrability of Fourier transforms of orbital integrals (and therefore, Harish-Chandra characters) in large positive characteristic.