FIM Nachdiplomvorlesung

Raf Cluckers (Université Lille 1)

Motivic Integration and Transfer Principles

February 18 - May 27, 2014
Tuesdays, 10.15 - 12.00h
HG G 43, ETH Zürich, Rämistrasse 101

Abstract

The main topic of the course is motivic integration, with a viewpoint which is close to p-adic integration, uniform in p. The goal of the series is to work towards the recent transfer principles for motivic integrals, which allow one to transfer several results from p-adic fields to local fields of positive characteristic and vice versa. We will develop the notions of motivic exponential functions, forming a natural class of functions which is stable under integration and under Fourier transformation. These functions, together with the transfer principles, have been recently used in applications to the Langlands program, for example (with Hales and Loeser) to derive the Fundamental Lemma in characteristic zero from the work of Ngô, and to show local integrability of Harish-Chandra characters in large positive characteristic, with Gordon and Halupczok. The subject combines techniques from algebraic/non-archimedean geometry, model theory, harmonic analysis and number theory.

(continued on the website)

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