Admissible Representations of $GL(2, F)$: p-adic case

Math 290B Number Theory Seminar

Spring 2007

This seminar will serve as a continuation to the Math 290B graduate seminar offered in Winter 2007. We will be studying smooth representations of p-adic groups, focusing primarily on the case of GL(2, F), where F is a finite extension of $\mathbb{Q}_p$. Topics this quarter will include (but are not limited to):

- admissible representations
- the principal series representation
- the Jacquet module of a smooth representation
- smooth functionals on a smooth representation
- the contragredient representation
- matrix coefficients of a smooth representation
- supercuspidal representations
- Whittaker functionals for an admissible representation
- Kirillov models for an admissible representation
- local zeta integrals
- L-function of an infinite dimensional irreducible admissible representation of $GL(2, F)$
- spherical Hecke algebra
- the Cartan decomposition
- unramified irreducible admissble representations

We intend to determine the Kirillov space for both supercuspidal and non-supercuspidal representations. We will also cover the local functional equation and the Satake transform. Additional topics such as wave packets and the Harish-Chandra transform for $PGL(2, F)$ will be covered if time remains. This course will be based on some notes by Prof. Rogawski of the same title.

We will be meeting on Tuesdays and Thursdays from 1-2pm in MS 6118.

The first lecture will be held on Thursday, April 19, 2007 in MS 6118.