Representations of p-adic Groups. Part 1

Syllabus.

1. Topology and elementary analysis over p-adic numbers.

2. l-spaces, l-groups. Examples.

3. Smooth representations. Irreducible and admissible representations. Complete reducibility of representations of compact groups. Schur's lemma.

4. Smooth functions and distributions on l-spaces. Hecke algebra of an l-group.

5. Character theory for admissible representations.

6. Equivariant sheaves and induction functors.

7. Harish-Chandra theory of parabolic induction (for the group GL(n,F)) .

8. Jacquet functor and its properties.

9. Cuspidal and quasicuspidal representations.

10. Structure theorems for the group GL(n,F). Harish-Chandra theorem and Jacquet's lemma.

11. Admissibility of cuspidal representations and their splitting properties.

12. Admissibility and strong admissibility theorems. Finiteness theorems for cuspidal representations.

13. Geometric lemma. Hopf algebra structure on the representation ring.

14. Second adjointness theorem and its corollaries.

Syllabus of the second part of the course