

The Farrell–Jones Conjecture for the Hecke algebras of reductive p -adic groups

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We formulate and sketch the proof of the K -theoretic Farrell–Jones Conjecture for the Hecke algebras of reductive p -adic groups. This is the first time that a version of the Farrell–Jones Conjecture for topological groups is formulated. It implies that the reductive projective class group of the Hecke algebra of a reductive p -adic group is the colimit of these for all compact open subgroups. This has been proved rationally by Bernstein using representation theory. The main applications of our result will concern the theory of smooth representations. In particular we will prove a conjecture of Dat.

The proof is much more involved than the one for instance for discrete CAT(0)-groups. We will only give a very brief sketch of it and the new problems occurring in the setting of totally disconnected groups. Most of the talk will be devoted to an introduction to the Farrell–Jones Conjecture and the theory of smooth representations of reductive p -adic groups, and discussion of applications.

This is a joint project with Arthur Bartels.