Stanford Department of Mathematics Number Theory Seminar

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Supercuspidal L-packets of p-adic groups

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Abstract

The Langlands philosophy predicts that nice Galois representations should match with automorphic representations, such as elliptic curves over $\mathbf{Q}$ versus modular forms. As a local and (somewhat) simplifed version, to a Weil-Deligne representation of a local field we should attach a finite set of irreducible admissible representations of p-adic reductive groups, called an *L-packet*.

Representations of p-adic reductive groups can still be difficult to handle, but sometimes questions can be reduced to *supercuspidal* representations (those that behave as if the p-adic group was compact). In particular, one might focus on supercuspidal L-packets: those that are composed of solely supercuspidal representations.

This talk is about a project to construct supercuspidal L-packets in terms of Weil-Deligne representations, After some introduction, we will establish a "reduction to unramified type A" framework and solve the unramified type A case. This is joint work in progress with J. Adler, S. DeBacker, J. Fintzen, T. Kaletha, and L. Spice.